

JOURNAL

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AMERICAN VETERINARY MEDICAL ASSOCIATION

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Volume CXX

APRIL 1952

Number 901

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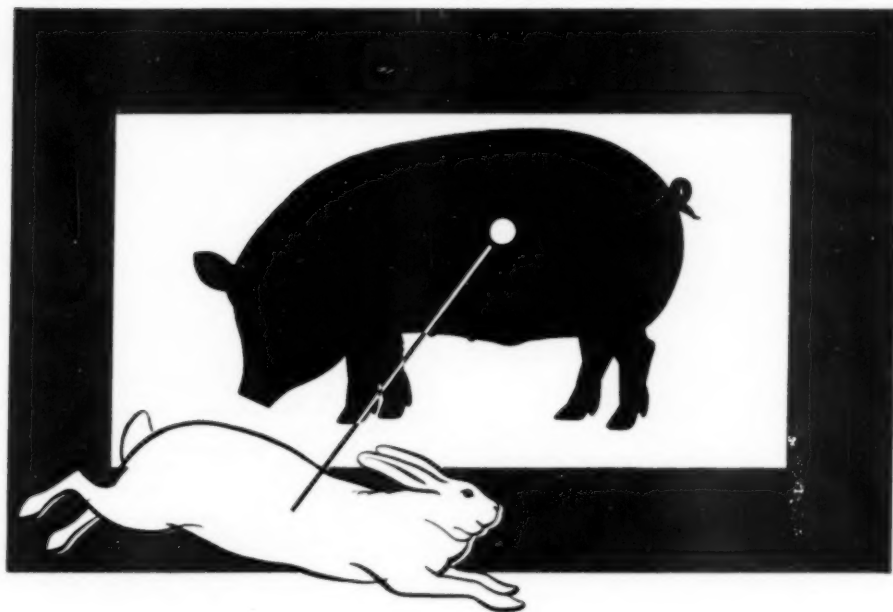
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AVMA ☆ Report

—Veterinary Medical Activities—

♦ The Board of Governors (Drs. W. G. Brock, chairman, President John R. Wells, and President-Elect W. L. Boyd) were in session at Association headquarters on Saturday, Feb. 16, 1952.

★ ★ ★

♦ Dr. W. A. Young, who has been the Association's treasurer since 1947, submitted his resignation to the Board of Governors effective Feb. 29, 1952. He left Chicago in March to become western regional manager of the American Humane Association, with headquarters in Hollywood, Calif. (see *The News, April JOURNAL*, p. 164).

Dr. H. E. Kingman, Jr., chief veterinarian of Wilson and Co., Chicago, was appointed by the Board of Governors at their meeting on February 16 to fill Dr. Young's unexpired term ending with the annual meeting in June.

★ ★ ★

♦ President John R. Wells will represent the Association at the annual meeting of the American Animal Hospital Association in Pasadena, Calif., April 30 to May 3. He will respond to the address of welcome at the opening session and will also speak on AVMA activities and the military status of veterinarians at one of the other sessions.

★ ★ ★

♦ President-Elect W. L. Boyd took part in the program of the Manitoba V.M.A. annual meeting in Winnipeg, March 27-28, 1952.

★ ★ ★

♦ Executive Secretary J. G. Hardenbergh spoke at the annual Career Conference sponsored by the University of Illinois on April 1, 1952. While in Urbana, he also spoke at the senior seminar of veterinary medical students.

★ ★ ★

♦ Dr. Van Houweling was in Washington, D.C., during the week of February 25 for conferences of a subcommittee of the Executive Board with government officials on the grade and pay of federally employed veterinarians. On the same trip, he attended the monthly meeting of the Committee on Local Arrangements for the Atlantic City Convention.

★ ★ ★

♦ Drs. W. A. Aitken, James Farquharson, and R. E. Rebrassier, who comprise the executive committee of the Council on Education, inspected the schools of veterinary medicine at the University of Missouri, University of Minnesota, and Oklahoma A. & M. College during March, 1952.

★ ★ ★

♦ The death of Dr. Andrew L. MacNabb, principal of Ontario Veterinary College, and member of the Executive Board from District I (Canada), on February 16, came just a few months before completion of his five-year term. Since Canada was first designated as a Board district in 1916, it has been served by only four different members in the thirty-six intervening years: the late Dr. F. Torrance, 1916-1918; Dr. George Hilton, 1918-1932; Dr. A. E. Cameron, 1932-1947; and Dr. MacNabb, 1947-1952.

★ ★ ★

♦ Ballots for nomination of Executive Board candidates were mailed to members in District I and District IX (the New England States and New York) on Jan. 24, 1952. Dr. Edwin Laitinen of West Hartford, Conn., is the incumbent in District IX.

★ ★ ★

♦ Executive Secretary Hardenbergh represented the Association at Dr. MacNabb's funeral, which was held in Memorial Hall, Ontario Veterinary College, Guelph, on Feb. 19, 1952.

★ ★ ★

♦ The Special Committee on Milk and Food Hygiene met at Association headquarters on Feb. 29, 1952.

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This teaches the puppy to pose so that the owner can easily groom the coat, check teeth, trim toenails, or train for general handling. Table training should be followed by lead training and other forms of obedience training.

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First Aid for vomiting - vomiting that is not associated with habit in certain dogs - should consist in keeping the patient warm, dry, and quiet.

Solid foods should be withheld, and when food is given it should consist of liquids such as milk.

If milk is not taken readily, or is vomited, use whites of eggs that are well beaten, or ice water. Sometimes a small cube of ice forced down the throat will work satisfactorily. Three and a half to seven grains of aspirin, depending on the size of the dog, may reduce the vomiting.

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*Rose, H. T.: The Use of Bacitracin in Small Animal Medicine, *J. Am. Vet. M.A.* 117:306 (Oct.) 1950.



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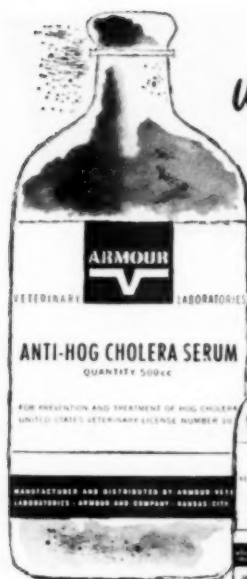


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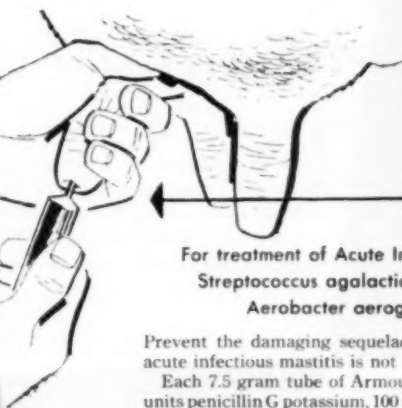


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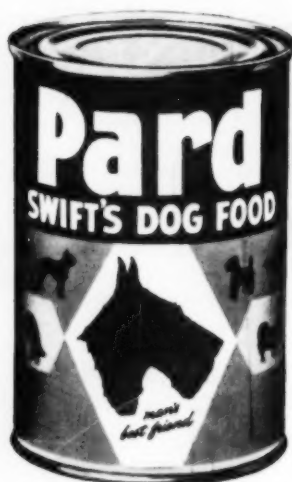
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No. 901

The Pathology of an Acute Hemolytic Anemia of Cattle in California Associated with *Leptospira*

D. R. CORDY, D.V.M., Ph.D., and D. E. JASPER, D.V.M., Ph.D.

Davis, California

DURING THE PAST YEAR or two, a number of outbreaks of an acute hemolytic anemia with hemoglobinuria have appeared in cattle in various parts of California. The condition shows a close resemblance to leptospirosis as described by various workers.¹⁻⁹ Since *Leptospira* organisms were found in silver-stained sections and the lesions showed great uniformity, it is felt that the data merit reporting, even though based on a presumptive diagnosis.

Leptospiras were first found in sections in March, 1951. Since that time, the organism has been observed in material from a total of 11 outbreaks. Sixteen individuals have been studied. These represent necropsies performed by the writers or laboratory examinations of specimens received from practicing veterinarians who provided necropsy reports and outbreak histories. Other cases from similar outbreaks, but in which *leptospiras* could not be found, have been excluded.

Both dairy and beef herds under varying types of management have been affected. Nine animals were 3 to 12 weeks old, 2 were 5 to 8 months, 2 were adults, and 3 of unknown age. This age distribution is probably a reflection of mortality at different ages, and may bear little relationship to incidence of the disease. Usually, several calves were reported lost in the herd, and one owner reported the death of 10 per cent of his calves. Older animals commonly showed little or no apparent illness.

The usual history stressed sudden deaths and hemoglobinuria. Some calves were described as well one day and dead the next morning. Often they were observed sick for only a few hours or overnight. Temperatures usually ranged from 104 to 106 F. Prostration, constipation, tachycardia, and dyspnea were variously reported. One calf, aged 2 months, showed counts of 2,500,000 erythrocytes and 32,000 leukocytes.

Age, sex, or history ruled out such causes of red urine as anaplasmosis, postparturient hemoglobinuria, bracken poisoning, pyelonephritis, or enzoötic hematuria. Negative aerobic and anaerobic cultures in a number

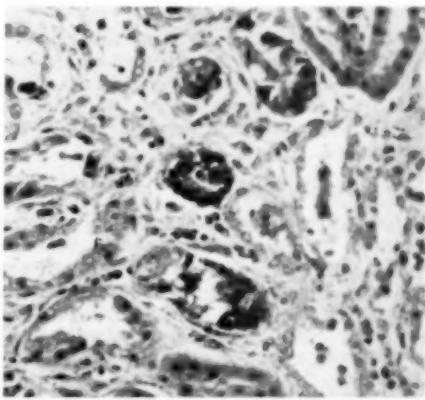


Fig. 1.—Renal cortex showing pigment accumulations, tubular degeneration, and stromal leukocyte infiltration.

From the School of Veterinary Medicine, University of California, Davis.

of cases eliminated the possibility of *Clostridium hemolyticum*, *Corynebacterium renale*, or other bacterial infections. Dark-field examinations of blood or urine from several individuals showed no leptospiras. Unfortunately, most of the carcasses had

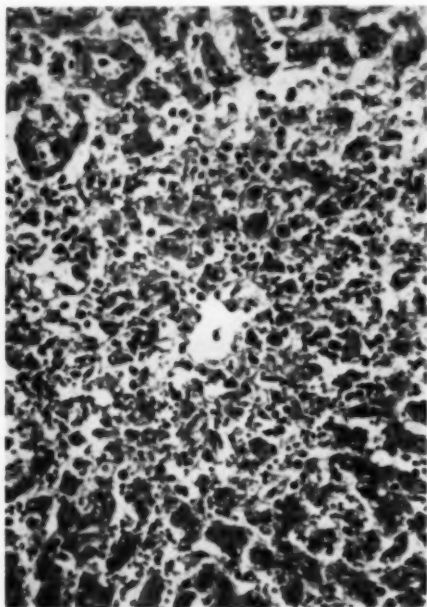


Fig. 2—Liver showing severe centrilobular necrosis about central vein.

been dead many hours. This probably explains the failure to infect young guinea pigs inoculated with kidney or liver material from a number of cases. Cultural isolation of *Leptospira* organisms was not attempted.

MACROSCOPIC LESIONS

Externally, the carcasses generally showed nothing unusual, although in some cases pallor or icterus of the exposed mucosa was evident. Upon opening the carcass, icterus was often observed, especially in younger calves. Depletion of depot fat was ordinarily not seen. Scattered small hemorrhages in the peritoneum were found in a few animals.

The kidneys were of normal color or were dark due to hyperemia and hemoglobin-

staining. The stripped surface almost always showed numerous reddish brown spots about 1 or 2 mm. in size. Occasionally, these foci were red or black. While resembling hemorrhages, the foci were actually masses of blood pigment in the more superficial renal tubules. In kidneys where stromal leukocyte infiltration was marked, there were small grayish white foci on the surface. Sometimes this led to a finely mottled pattern.

Urine found in the bladder or other parts of the urinary passages was reddish and clear. The color varied from bright cherry red to brownish red. If autolysis is not advanced, the clarity of the urine may be taken as evidence of hemoglobinuria rather than hematuria. The bladder itself showed no lesions.

The liver varied from a red-brown to a distinct yellowish tan or orange color. The consistency was normal or somewhat soft and friable. The size was normal or slightly enlarged, the latter perhaps due to fatty changes. It must be remembered that the liver is relatively large in the young calf. The bile was usually thick, granular, and yellowish brown. Its volume was probably related to the stage of digestion and duration of the illness. Occlusion of the biliary system did not occur, as the intestinal contents were usually deeply stained by bile pigments.

The spleen was usually of normal appearance, although occasionally somewhat dark and full in outline.

Epicardial petechiae were common. Often the myocardium was pale. In some cases, the clots in the chambers were not dark and jelly-like, but dull, brownish, and friable. Where postmortem clotting was not yet present, the blood was thin and watery.

The lungs were frequently incompletely collapsed and of a somewhat sepia-like color. Occasional cases showed a little froth in the lower air passages as evidence of alveolar edema.

The lymph nodes were generally juicy and sometimes pinkish or red. Discrete hemorrhages were observed in a few nodes. The thymus in younger animals sometimes showed small hemorrhages.

HISTOPATHOLOGY

Microscopic lesions in the kidneys were consistent, varying among individuals only in degree. The pigment casts (fig. 1) men-

tioned earlier were usually numerous in the convoluted tubules of the outer cortex. Granular debris was common throughout the nephron lumen from Bowman's capsule downward. A few kidneys showed casts composed largely of neutrophils. Large hyaline casts and dilated tubules were rare. Degenerative changes of slight to moderate severity and extent were common in the convoluted tubules. These ranged from cloudy swelling to necrosis. The glomeruli did not appear to be involved. The cortical stroma usually showed numerous leukocyte accumulations. These foci comprised macrophages, lymphocytes, plasma cells, and some neutrophils. They occupied a periglomerular, perivascular, or intertubular location. Except for some granular material in collecting tubules, the medulla was normal.

Necrosis, usually centrolobular, was seen in the liver (fig. 2). In two thirds of the cases it was moderate or severe, often half of the lobule being involved. In the area of necrosis, the sinusoids were often dilated by blood containing an increased number of leukocytes, both mononuclears and neutrophils. Hemorrhage into the space of Dessé occurred occasionally. In one third of the cases, necrosis was limited to only a few hepatic cells about the central vein. Degenerative changes were frequent in the hepatic cells adjacent to the necrotic foci. Lipidosis was often marked, and cloudy swelling and hyaline droplet degeneration were observed. Bile stasis in the canaliculi and interlobular ducts was often marked. In some cases, it was limited to parts of the canaliculi just outside the necrotic areas. Yellowish brown pigment granules were sometimes seen in the hepatic cells. Leukocytic infiltration of the interlobular connective tissue was consistently present and often severe. Most of the cells were mononuclears, although some neutrophils were present.

The spleen showed a variable engorgement of the red pulp with blood. Erythrocytaphagy was frequent. Accumulations of blood pigment did not appear to be extreme. Neutrophils were often scattered throughout the red pulp and occasional tiny foci suggesting necrosis were observed. The splenic follicles were inactive.

Lymph node sections showed hyperemia, edema, and a few erythrocytes in the sinuses. Neutrophils were scattered about

in the sinuses and looser lymphoid tissue. Lymph channels were somewhat dilated and often contained pink granular material, probably coagulated protein.

The lungs showed some alveolar emphysema and occasional alveolar edema. A little fibrin and occasional leukocytes were seen in scattered alveoli.

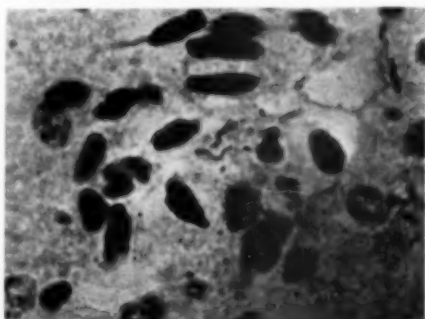


Fig. 3—Silver-stained renal cortex showing two *Leptospira* organisms in center.

LEPTOSPIRA IN SECTIONS

Thin sections of kidney and liver stained with silver by the method of Levaditi often showed structures indistinguishable from *Leptospira* (fig. 3). These bodies were slender, elongated, sharply delineated, black-staining, and had hooked ends. These were found in 15 kidney and eight liver sections from 15 cattle in 11 outbreaks. The numbers of organisms were variable. They were found in tubule lumens and renal stroma, and in and about the hepatic sinusoids. Numbers were consistently greater in areas of tissue damage.

DISCUSSION

The symptoms and lesions of this disease, especially in younger calves, are consistent and agree closely with those reported by others in leptospirosis. Apparently in calves an almost paroxysmal hemolytic anemia occurs. This readily accounts for the pallor, icterus, dyspnea, weakness, hemoglobinuria, bile stasis, and hemoglobin casts. The hepatic necrosis may be due both to local damage by *Leptospira* present in the area and to anoxemia. Renal degenerative and inflammatory changes are presumably caused by direct action of the *Leptospira* organ-

isms and the presence of hemoglobin casts as in lower nephron nephrosis.

Although Koch's postulates were not fulfilled, it is difficult to avoid the conclusion that the *Leptospira* are of etiologic significance. Absence of other known agents and similarity to cases of known leptospiral etiology support this contention.

SUMMARY

Lesions resembling those of leptospirosis were found in 16 individuals from 11 outbreaks of disease associated with hemoglobinuria in cattle. *Leptospira* organisms were observed in silver-stained sections from cases in all of these outbreaks. A presumptive diagnosis of leptospirosis is made.

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Excerpts from the 1951 Report of the Chief of the U. S. Bureau of Animal Industry

Tumors in Food-Producing Animals.—Data indicates that about 150,000 inspected carcasses, other than poultry, have tumors, about 10 per cent of which are generalized. It is estimated that twice that many occur which would mean an annual loss of about \$3,000,000 from tumor formations. The incidence is highest in adult cattle, much lower in sheep, swine, and young animals. Sarcomas are about twice as common as carcinomas.

CATTLE

Anthrax Decreasing.—A national survey shows

less anthrax in various species of animals in 1950 than in 1949. Only 61 outbreaks in 12 states were reported in 1950, with a loss of about 595 animals. Most outbreaks were in infected areas where the owners had failed to vaccinate. New areas were in Oregon and Washington, the greatest losses in Louisiana, Texas, and California. In the past six years there has been an average of 110 outbreaks with a loss of about 1,417 animals per year.

• • •
Vitamin A Deficiency in Range Cattle.—Experiments at Spur, Texas, indicate that vitamin A deficiency in feedlot steers is related to rainfall, the range forage carrying less carotene during dry periods. Night blindness was observed in steers the forty-fourth day in the feedlot after one severe summer drought. The average feedlot ration is low in carotene. One lot of cattle had 0.66 parts per million of carotene in the blood plasma when they entered the feedlot, 0.42 parts after seventy-seven days, and 0.40 parts when marketed. Cattle on succulent forage store several times as much carotene as do those on dry range.

• • •
Poisoning by Insecticides.—Lindane, the gamma isomer of benzene hexachloride in 0.05 per cent emulsion spray, poisoned 1-week-old Jersey calves. Screw worm smears containing 3 per cent lindane were well tolerated. Two per cent toxaphene also poisoned calves, Jerseys being much more susceptible than Herefords. Continuous spraying with DDT caused no toxic effects.

• • •
Phenothiazine Dosage for Calves.—Heavily parasitized Hereford calves, 5½ to 9 months old and averaging 286 lb., were divided into five lots. One lot received the recommended dosage, 55 Gm., three lots received larger doses, and the fifth lot was untreated. The latter lost an average of 8.8 lb. in three months, the treated lots all gained about the same, an average of about 24 lb.

Also 60 lightly parasitized Herefords, 7 to 8 months old and averaging 515 lb., were treated in three equal lots with 50 Gm., 63 Gm. (the recommended dose for this size), and 76 Gm., respectively. In one hundred days they had gained an average of 92.8, 95.1, and 91.2 lb., respectively.

SWINE

Variant Hog Cholera Virus.—A late report (June, 1951) by the BAI regarding losses from the use of hog cholera serum and virus in 1950 states that their findings confirmed those of 1949: that some viruses used possessed characteristics unlike standard virus; immunized pigs were unaffected by such virus; increased dosage of serum reduced or eliminated the ill effects of the variant virus; suckling pigs showed less susceptibility to variant virus than weaned pigs.

Several serum producers adopted a system for using the same serial of virus for a long period of time, after testing it to ascertain that it carried

no variant characteristics. This virus is stored at -40 F., which prevents its impairment, and is used as a seed virus for virus production as well as for hyperimmunizing swine.

Tests showed that the minimum dose of serum to protect against 2 cc. (2 million lethal doses) of regular virus would also protect against 100 cc. of the same virus. Pigs given only 0.0001 cc. of regular virus, with serum, withstood exposure to cholera ninety-six days later, as well as pigs given 50 cc. of the same virus with the same dose of serum.

Treating swine infected with *Brucella suis* with liberal doses of a combination of streptomycin and sulfadiazine for two days apparently freed their blood of the organisms but foci of infection remained in their bodies. The treatment seriously interfered with the growth of the pigs.

Immunity to Swine Erysipelas Now May Be Tested.—Continued research showed that swine erysipelas can be consistently induced in susceptible animals by exposing scarified areas of the skin. This suggests that under natural conditions swine may become infected through minor cuts and scratches on the skin.

A commercial desiccated swine erysipelas vaccine tested two years after production still retained satisfactory virulence.

Swine Stomach Worm.—Five of a litter of 7 pigs, 9 weeks old, were fed stomach worm larvae — 140 up to 140,000. All were passing blood in their feces seven to ten days later and this continued for the three months they were under observation. The most heavily infested pig died in eight weeks, having lost 3 lb., and 557 worms were found in its stomach. The 2 control pigs gained 60 lb., the other 4 varied with their infestation, but gained an average of 38 lb.

Feeding powdered diethylstilbestrol to gilts, at the rate of 2.5 to 25.0 mg. daily, inhibited estrus but caused no permanent improvement. Less than 2.5 mg. daily caused no ill effects.

SHEEP

Sodium Silicate a Factor in Urinary Calculi.—Experiments with fattening lambs at Beltsville, Md., indicate that sodium silicate, which occurs in some plant tissues, is more of a factor in causing urinary calculi than is the high or low intake of vitamin D. The silicate is directly absorbed by the body and disturbs the utilization of other minerals. It increased the magnesium blood level and the excretion of magnesium and phosphorus, both of which were present in the gross calculi formed. High alkalinity predisposes animals to the formation of calculi, but neither vitamin D nor silicates affect the urine reaction.

The Common Tapeworm.—The tapeworm, *Moniezia expansa*, may be injurious to sheep when associated with other internal parasites but not when

present alone, even in great numbers. Of young lambs fed large numbers of larvae, 1 had 114 tapeworms and others over 50, so that a considerable portion of the small intestine was well filled with them, yet they grew as well as uninfested controls. Most of the tapeworms were eliminated naturally during the second month.

Preliminary trials indicate that arsenates of calcium, cobalt, copper, and iron give unusual promise in eliminating the common intestinal tapeworm from sheep. One-half gram capsules were given without fasting. Arsenate of iron in 1- to 2-Gm. doses eliminated the stomach worms also. Lead arsenate has been effective but lead might be dangerous.

Phenothiazine-Salt Mixture.—A 1 : 12 mixture of phenothiazine and salt fed free choice to sheep again proved of value in holding down experimentally induced *Haemonchus contortus* infestation, as well as suppressing ova production by the worms that did develop. However, when similarly fed to goats with young kids, it was ineffective. Of 19 goats, 2 does and 3 kids died from gross infestation with trichostrongyles, stomach and nodular worms. The kids ate little of the mixture so progressively contaminated the pasture beyond control.

POULTRY

An experimental study of portals of entry for fowl cholera, *Pasteurella multocida*, shows that when introduced into the wattles or injected into the muscle, heart, or peritoneum all birds die; when injected into a scarified comb, 90 per cent developed the disease; subcutaneously, 60 per cent developed the disease; when introduced into the eye, 50 per cent developed the disease. None were affected by drops in the nostrils or by introducing *Pasteurella multocida* into the crop in a capsule. There is no evidence that it is transmitted through eggs.

Newcastle Disease Damages Egg Quality Permanently.—Damage was still evident twelve months after recovery of the birds. Pullets vaccinated with live virus three months after starting to lay stopped temporarily and when they resumed laying, their eggs also showed the effects of the disease. Vaccinating pullets three months before their egg production started had no ill effects on the eggs.

DOGS AND CATS

Rabies in Dogs Declines.—Nation-wide surveys, begun in 1938, show that 1950 had the lowest number of cases since that time,—4,979. The high of 9,067 cases came in 1944. Community-wide vaccinating programs doubtless are helping because rabies in other species except man, which parallels dogs, is not decreasing. Cattle, with 948 cases, and wild animals showed marked increases. The greatest incidence was in Texas, New York, Indiana, Georgia, Iowa, South Carolina, Alabama, and Ohio, in that order.

The Princeton Veterinary Clinic

J. W. ALBRECHT, D.V.M., and H. L. MARSH, D.V.M.

Princeton, Illinois

THE OBJECTIVES in planning and building our clinic were to give better service to our large animal clientele as well as to provide small animal facilities. Due to the fact that both projects were new in our area, we tried to plan a building of minimum capacity and expense that would allow us to provide all services. There were, however, provisions made for expansion of either large or small animal facilities.

Our practice embraces an average radius of 15 to 18 miles and, before we built our clinic, it was 98 per cent large animal. The clinic is situated on a lot 70 ft. by 150 ft. just outside the eastern limits of Princeton, Ill., but city utilities are provided.

As there are very few published plans for buildings of this type, our only plans consisted of a drawing, incorporating our ideas, on graph paper made by ourselves. The general type of construction was decided upon and this rough drawing was given to the contractor.

Drs. Albrecht and Marsh are the owners of the Princeton Veterinary Clinic, Princeton, Ill.

The building is of concrete block construction with cement floors throughout. Red cement coloring was used in the front section and a patented product, mortabase, was applied as a surfacing in the large animal section to minimize the chances of slipping.

The walls in the reception room, office room, and small animal surgery are made of hard-finish plaster. In the kennel room, large animal room, and store rooms, the concrete walls are covered with a cement paint. Hot water radiant heat is used except in the large animal room where a unit heater with a blower and a separate thermostat facilitates a lower temperature.

From the reception room, Dutch doors to the office and dispensary provide a natural barrier to the inquisitive client without the rebuff of closing the ordinary door. A folding door was used in the office to cover file cabinets and shelves which can become quite cluttered even in a well-kept clinic.

The small animal surgery and dispensary were constructed as one room. Shelving



Fig. 1.—The large and small animal hospital owned by Drs. J. W. Albrecht and H. L. Marsh, Princeton, Ill.

7 ft. high serves as a wall to break the line of vision from the reception room to the surgery, and at the same time cuts construction costs. Glass block is utilized in this room to provide light yet guarantee privacy. The examination of small animals and surgery are performed in the same room as we did not think it necessary, in our practice, to provide separate rooms.

In the kennel room, we have a bath tub for bathing dogs. Over the tub is a hinged board used for clipping, grooming, and preparation for surgery. Three exercise

runs, 4 ft. by 20 ft. with concrete floors, are connected to the kennel room.

The stocks in the large animal room are interchangeable for horses and cows. The stanchion can be readily replaced with bars to make work possible on horses. The width of the stocks can be adjusted from 20 to 30 in., or the side bars can be removed for surgery after restraint is complete. Our operating table is easily pushed against the wall when not in use, and the box stalls are constructed of gates which

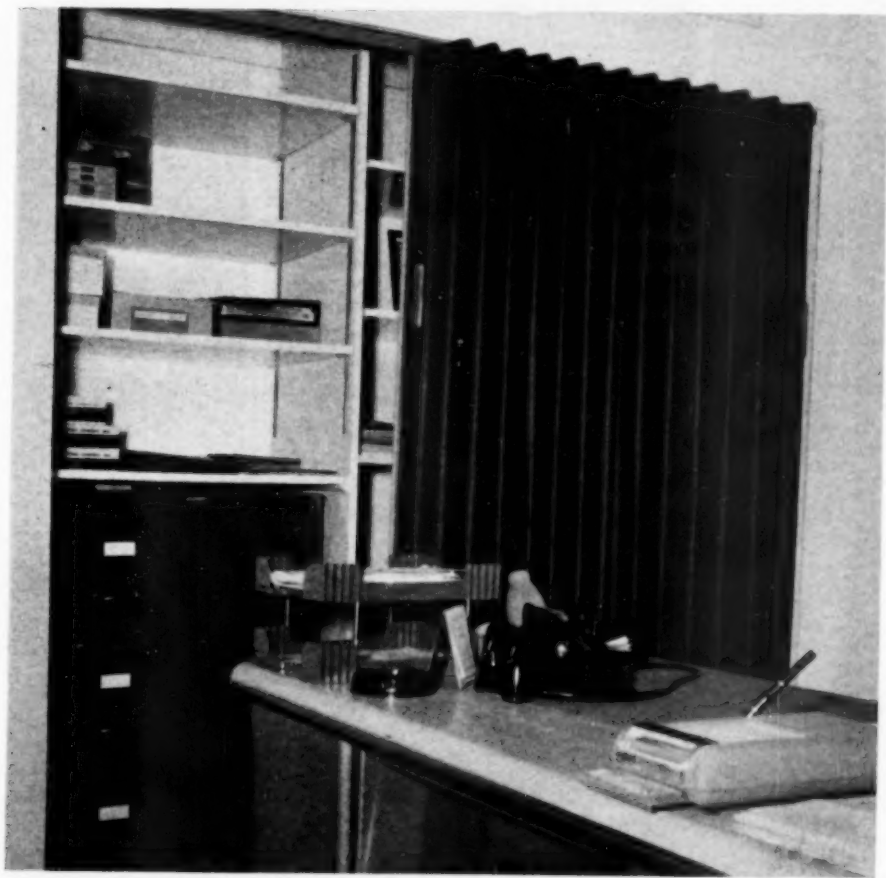


Fig. 2—The office of the large and small animal hospital at Princeton, Ill.



Fig. 3—A view through the Dutch door of the dispensary and small animal surgery from the reception room.

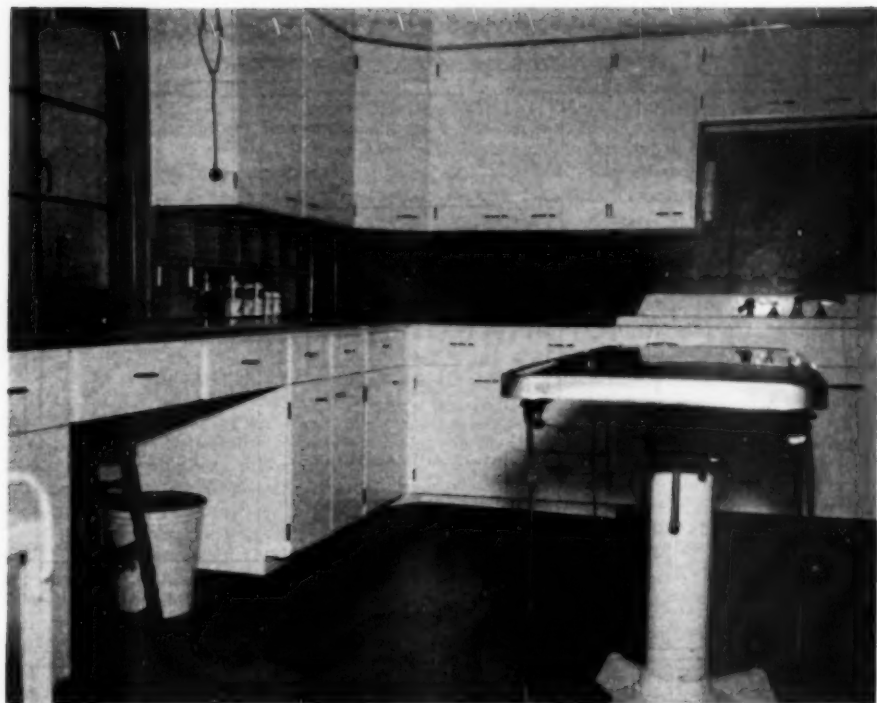
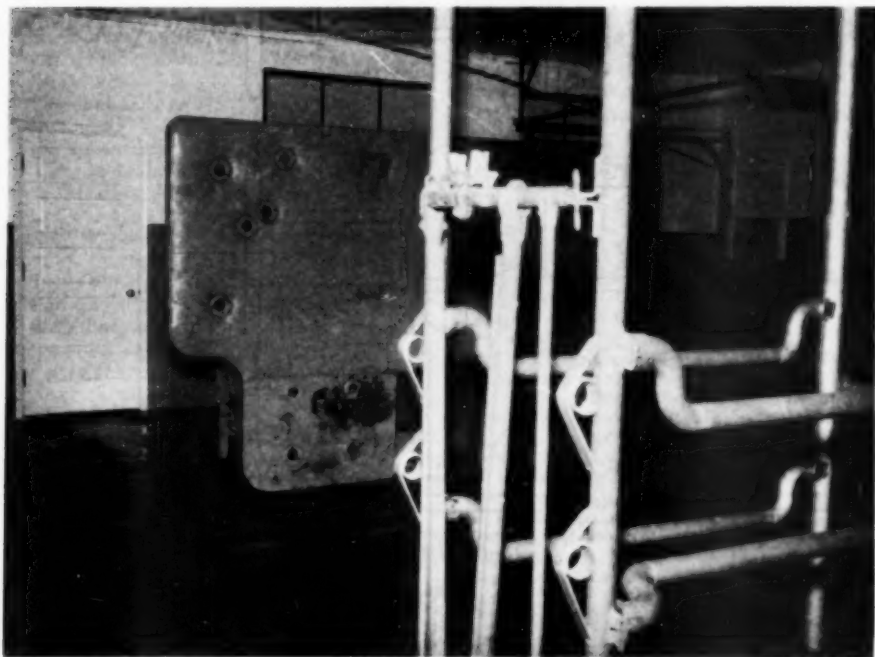


Fig. 4—The small animal surgery and examination room, showing use of glass blocks over counter.

Fig. 5—The large animal surgery and box stalls (in the right background) of the Princeton, Ill., large and small animal hospital.



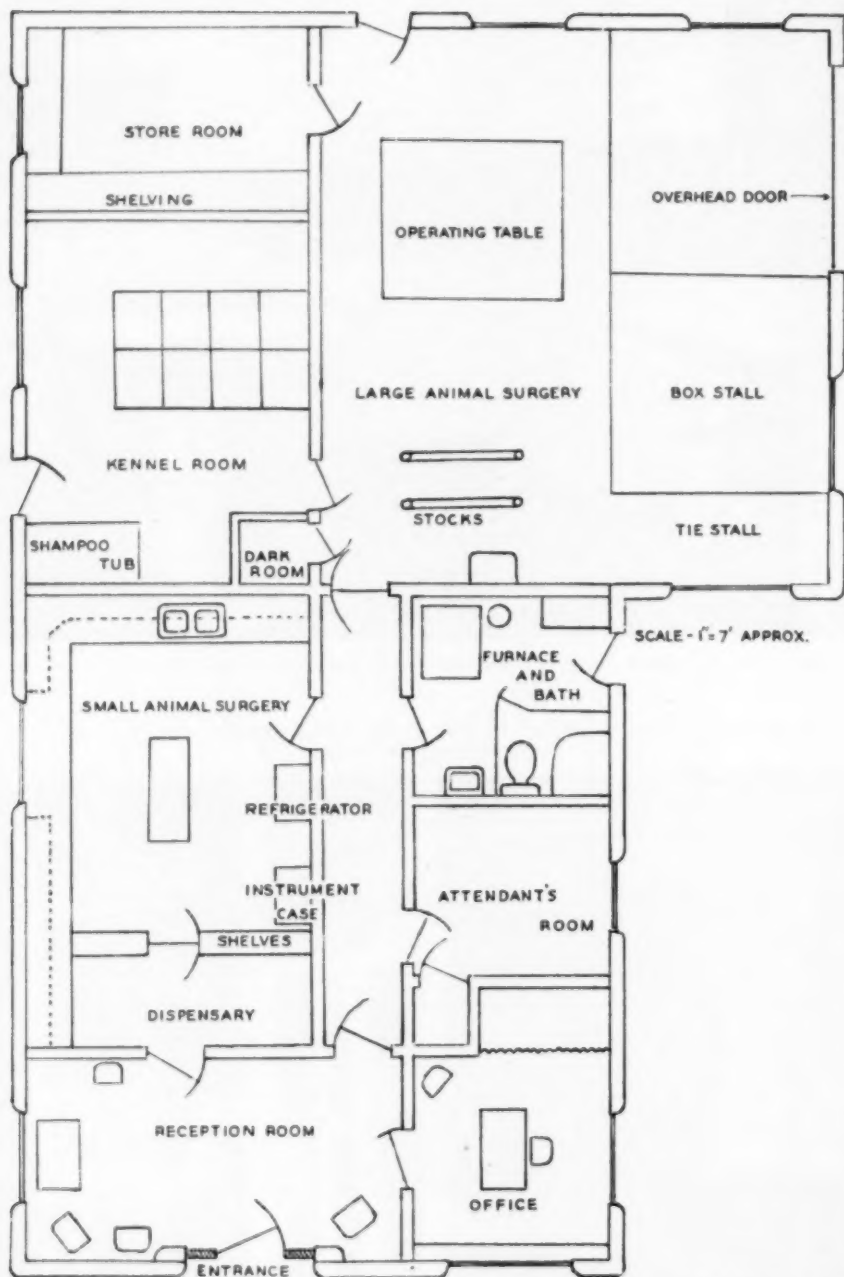


Fig. 6—Plans of the large and small animal hospital at Princeton, Ill., drawn by the owners, Drs. H. L. Marsh and J. W. Albrecht.

can be swung against the wall when not in use.

We believe this type of building with a construction cost of approximately \$15,000 was a good investment from any point of view.

Foot-and-Mouth Disease Breaks Out in Canada

Many Americans, especially veterinarians, experienced a tingling of the spine when, on February 25, an outbreak of foot-and-mouth disease near Regina, Saskatchewan, was reported. Especially concerned were those in the northern plain region, since Regina is about 100 miles north of the Montana-North Dakota border.

Because the disease was suspected, Canadian officials requested that a representative of the United States BAI be sent to investigate. Therefore, Dr. M. S. Shahan was present to assist in making the diagnosis and setting up controls. The diagnosis was confirmed by the complement-fixation test and the virus was reported to be type A.

As a result of this outbreak, the BAI has instructed its border and ocean port inspectors to halt inspections of Canadian ruminants and swine and to take precautions to prevent the entry of such animals or their fresh meat.

Approximately 25,000 cattle have been placed under quarantine. The infection was at once identified on 22 premises. Two weeks later no newly infected premises had been found.

The appearance of foot-and-mouth disease in Canada reemphasizes that all who work with livestock should be especially observant of the conditions of animals and should report immediately any suspicious symptoms to the Bureau field office or the state veterinarian's office, so that proper investigation and diagnosis may be made.

State livestock sanitary officials and BAI representatives have been carrying on, for the past year or more, a program designed to alert all veterinarians and livestock owners in the country to the importance of the early detection of symptoms which might be those of foot-and-mouth disease, or any of the other dangerous foreign animal diseases. Trained Bureau personnel, to diagnose such diseases, are placed strategically throughout the country. One is only a few hours from any farm.

An epizootic of foot-and-mouth disease

now raging in Europe, recent outbreaks in Venezuela, Colombia, and now in Canada—all attest to the elusiveness and "tricky" quality of this dreaded livestock disease.

Should the disease pierce our border defenses, the BAI, coöperating with state livestock sanitary officials, would direct a program designed to stamp out the disease through a strict program of inspection, quarantine, slaughter of diseased and exposed animals, and disinfection of contaminated premises.

Foot-and-mouth disease appeared in the United States in 1870, 1880, 1884, 1902, 1908, 1914, twice in 1924, and once in 1929. Our most recent experience has been in coöperation with Mexico to eradicate foot-and-mouth disease in that country. Because the infection had become so widespread before an eradication program was started, vaccination was used for a time, in conjunction with the other measures that had proved successful in the United States.

In Canada, the available evidence indicates that the disease has probably existed in the affected area since early in December. It was not recognized immediately because its early manifestations were extremely mild and not typical of foot-and-mouth disease. First diagnoses confused the infection with vesicular stomatitis. However, as the virus passed from one animal or herd to another, the virulence of the disease increased, and its identifying characteristics became apparent. A recent displaced person employed on a Canadian farm, from an area in Germany where the disease abounds, has been suspected of carrying the virus on his clothing.

The following information was received by telephone from Dr. T. Childs, veterinary director general, Dominion Department of Agriculture, on March 12, just before going to press:

The outbreak has been confined within the area originally quarantined; no new cases outside that area discovered. All infected animals have been destroyed and buried deeply in lime. Farm-to-farm inspections in the quarantined area almost completed. Farm-to-farm inspections outside quarantined area are carried forward as rapidly as possible. All veterinarians available are conducting farm-to-farm inspections throughout Saskatchewan and other provinces which have received cattle from Saskatchewan the past four months. This first inspection is almost completed and negative. Premises will be reinspected at suitable intervals. This outbreak is believed to be well under control. Approximately 300 veterinarians are on this work alone. Particular attention is given those areas in southern Saskatchewan adjacent to the United States border.

SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

The Reproductive Ability of Heifers Recovered from Bovine Hyperkeratosis

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and E. M. BROUSE, B.Sc.

Lincoln and Valentine, Nebraska

BOVINE HYPERKERATOSIS may affect cattle of all ages. It is a chronic disease in which the pathological alterations of the tissues and organs are not clearly understood. Olafson⁵ states that pregnant cows with bovine hyperkeratosis often showed one or more of the following symptoms: prolongation of pregnancy, failure of development of udder and relaxation of pelvic ligaments in preparation for parturition, retained placenta, mastitis, and metritis. Aitken¹ associated dystocia and death of the fetus with bovine hyperkeratosis in a small herd of cattle. Some workers considered lesions of the genital tract as characteristic of bovine hyperkeratosis. Olafson and McEntee⁴ report change of the lining of the excretory ducts of the testes and accessory sex glands to a stratified squamous epithelium which had keratinized. Gartner's ducts were reported enlarged with stratified squamous epithelium, and the cervix showed some metaplasia of epithelium.³

While the exact etiology of bovine hyperkeratosis is as yet obscure, sufficient evidence has accumulated to indicate that ingestion of a toxic material leads to the condition.^{3,4,6,7} Outbreaks of bovine hyperkeratosis in a herd means that a number of animals are eating the toxic factor. Because of this, and the existence of lesions

in the genital tract of infected animals, there is possibility of permanent damage to the reproductive system as a sequel to bovine hyperkeratosis. The outbreak on which a previous report has been made⁶ occurred in a group of young female cattle. Rather comprehensive and detailed information was accumulated during the course of the outbreak as well as during the period of convalescence. This provided material with which to study the practical problem of whether bovine hyperkeratosis had any permanent affect on the reproductive ability of heifers. These data and the results constitute the basis for this report.

MATERIALS AND METHODS

The 94 heifers involved in these studies were born in the spring of 1948 and raised as calves under commercial ranch conditions. In November, 1948, they were placed in 15 different pens and fed various experimental rations during the winter. Bovine hyperkeratosis made its appearance in all of the pens where these calves were fed. There were originally 150 calves in the pens; 130 developed the disease and, of these, 47 died with it. The extent of the disease varied in the different pens and the severity of symptoms varied in the 94 heifers. The outbreak of bovine hyperkeratosis began late in January, 1949. The last fatal case succumbed in November, 1949.

Beginning in August, 1949, observations were made on estrus of the individual heifers. The original plan was to obtain the dates of four estrous periods and thus establish the cycle of each animal. The heifers were to be bred individually at the fourth estrus. By the end of May, 1950, only 53 of the 94 heifers had been bred according to this program. The remaining 41 heifers were therefore divided into two groups and placed in pastures with bulls.

Five bulls were used. Three of the bulls were Herefords, purchased and brought on to the premises after the outbreak of bovine hyperkeratosis had subsided. Two of the bulls were Short-

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A contribution from the inter-regional project entitled "X" disease (Hyperkeratosis of cattle), a cooperative study participated in by the Agricultural Experiment Stations and the Bureau of Animal Industry, U. S. Department of Agriculture.

The authors gratefully acknowledge assistance from Dr. A. H. Frank, Bureau of Animal Industry, Beltsville, Md., and Dr. V. Bagdonas, Department of Animal Pathology and Hygiene, University of Nebraska, Lincoln.

From the Department of Animal Pathology and Hygiene, University of Nebraska, Lincoln (Olson and Cook); and the Valentine Experiment Substation, Valentine, Neb. (Brouse).

horns, raised on the premises during the time of the outbreak of bovine hyperkeratosis. Both of these bulls had been fed some of the feed responsible for the condition.

Gynecological examination was made on each of the heifers at four different times (April 6, April 18, Aug. 1, and Oct. 11, 1950) to determine pregnancy.

RESULTS

The data can best be examined from the standpoint of severity of bovine hyperkeratosis in the heifers. The symptoms and lesions shown during four months of the outbreak preceding Sept. 1, 1949, were used as criteria for dividing the heifers into four groups. Group A consisted of 13 heifers which were continuously sick during this four-month period but subsequently recovered. Group B consisted of 37 heifers which showed definite symptoms of the disease but recovered in the four-month period. Group C comprised 24 heifers suspected of having the disease and which recovered during the four-month interval. Group D consisted of 20 heifers which, while they were in the same pens and receiving the same feedstuff as the manifestly sick animals, did not themselves show hyperkeratosis of the skin or papilloma of the oral mucosa at any time during the period of observation.

The comparative severity of disease in the different groups may be appreciated by utilizing the rating system developed to evaluate the symptoms and lesions.^{6,7} With this system, the higher the score the more severe the symptoms of the disease. From May to September 1, 1949, group A heifers had an average score of 15.6; group B, 7.1; group C, 4.8; and group D, 1.7. The rate of recovery from bovine hyperkeratosis is somewhat indicated by the score values for the subsequent three-month period which were as follows: group A, 8.1; group B, 1.3; group C, 0.7; group D, 0.5.

Estrus was observed in 79 of the 94 heifers. Two or more estrous periods were observed in 53 heifers so that an estimate could be made of their estrous cycle. Most of the heifers had cycles fifteen to twenty-five days in length (table 1).

Breeding was begun in the fall of 1949 and continued until September, 1950. The original plan to obtain information on estrous cycles by observing four estrous periods before breeding could not be followed for various reasons. In some heifers, symp-

toms of estrus were not evident, and others were overlooked by the herdsman. By the end of May, 1950, 53 heifers were with calf. The month in which conception occurred was correlated with the severity of previous symptoms of bovine hyperkeratosis (table 2). The heifers of group A, which were most severely affected with bovine hyperkeratosis, were somewhat slow to conceive. This was probably because they were slow to show estrus and the plan for breeding required observation of four estrous periods. There was no marked

TABLE 1—Observations on Estrus and Correlation with Severity of Previous Bovine Hyperkeratosis*

Group	No.	Estrus observed in	Length of estrus		
			Could not determine a cycle	less than 15 days	15-25 days
A	13	6	2	1	3
B	37	32	7	8	24**
C	24	22	11	2	9
D	20	19	6	4	12*

*Group A most severely affected, group B moderately, and group C least affected; group D regarded as not affected.

**Ten heifers had variable cycles and counted twice.

†Seven heifers had variable cycles and counted twice.

difference in the rates of conception in groups B, C, or D (table 2). The remaining nonpregnant heifers were placed in pastures with bulls and were all pregnant after four months (table 2).

Considering all 94 heifers, it is known that 17 required two services, 9 required three services, and only 2 required four services for conception to occur. While these data are somewhat sketchy, they seem to suggest that the heifers conceived readily.

Most of the heifers were settled by the

TABLE 2—Correlation of Severity of Previous Bovine Hyperkeratosis with Month of Conception*

	Heifers in group				All groups
	Month bred	A	B	C	
Individual mating	Sept.	...	1	...	1
	Nov.	...	1	...	2
	Dec.	...	2	4	7
	Jan.	1	4	3	10
	Feb.	1	...	1	5
	Mar.	1	2	3	8
	April	3	5	2	13
	May	1	5	1	7
	Subtotal	7	20	14	53
Pasture mating	June	2	3	4	15
	July	3	11	6	22
	Aug.	1	1	...	2
	Sept.	...	2	...	2
	Subtotal	6	17	10	41
	Total	13	37	24	94

*Group A most severely affected, group B moderately, and group C least affected; group D regarded as not affected.

Hereford bulls (63 of 94). More than half of these were settled by one of the Hereford bulls. A second Hereford bull served only 3 heifers and had to be discarded because of injury. The third Hereford bull was used only sparingly. Only 1 of the 2 Shorthorn bulls was a good breeder. The other was not interested in heifers showing estrus and none were settled by him. While

TABLE 3—Average Length of Gestation and Average Weight of Calf at Birth Correlated with Severity of Bovine Hyperkeratosis Previous to Conception*

Group	Gestation period	Weight
A	285 days (6)**	66 lb. (13)
B	286 days (17)	68 lb. (37)
C	288 days (16)	69 lb. (24)
D	290 days (10)	71 lb. (20)
All groups	287 days (49)	69 lb. (94)

*Group A most severely affected; group B moderately, and group C least affected; group D regarded as not affected.

**Figure in parentheses indicates number on which average was based.

both Shorthorn bulls had consumed some of the feed known to be capable of producing bovine hyperkeratosis, actual symptoms of the disease were noted only in the impotent bull.

The average gestation period in 49 heifers where the date of conception was known was 287 days (table 3). In 6 heifers which had bovine hyperkeratosis more severely, the average gestation period was 285 days. This was five days shorter on the average than for 10 heifers which had shown no evidence of bovine hyperkeratosis. In each of the groups there was, of course, some variation between the shortest and the longest gestation period.

The 94 calves averaged 69 lb. at birth. The average weight of calves coming from the different groups of heifers varied from 66 to 71 lb. and was correlated with the average gestation period (table 3). There was considerable variation in the weight of calves within each of the groups.

Dystocia and retained placenta occurred in some of the heifers but was no more pronounced in any one group than the others.

DISCUSSION

The results of this study indicated that heifers recovered from bovine hyperkeratosis were able to produce calves just about as well as heifers that had not had bovine hyperkeratosis. All were handled under essentially similar conditions.

The estrous cycle, as observed in some of the heifers, seemed to be approximately normal when compared with data given by Asdell.¹ He indicates that the average estrous cycle for heifers is about twenty days and that approximately 85 per cent of these fall between eighteen and twenty-four days.

The average duration of gestation of 287 days, observed in 49 of the heifers in this experiment, compares favorably with the average of 285 days for Herefords as indicated by Asdell.²

It is evident from these studies that when the cause of bovine hyperkeratosis is removed and the animals permitted to recover, there is no permanent damage of the female reproductive tract as a primary result of bovine hyperkeratosis. In older cows, it is possible that bovine hyperkeratosis might lower the resistance so that a chronic metritis would render the animal infertile. There was no evidence of metritis in the heifers of this experiment. Perhaps this was because the usual avenue of infection through the cervix was not opened during the course of the outbreak of bovine hyperkeratosis.

One bull, which as a calf had consumed the feed known capable of producing bovine hyperkeratosis, developed the disease and recovered. He was impotent. Another bull which consumed some of the feed but failed to develop the disease, possibly because he consumed an insufficient amount, was fertile. While these data are meager the observation, coupled with the finding of epithelial metaplasia in the ducts of the male sex organs by Olafson and McEntee,⁴ suggests that infertility of the male might result from bovine hyperkeratosis.

Since there is a possibility that germ plasm might be affected by the toxic material of bovine hyperkeratosis acting on two successive generations of cattle, a further study is in progress. This involves giving toxic feed to another generation of heifer calves in amounts sufficient to produce mild symptoms of bovine hyperkeratosis. They will be allowed to recover and then be bred. These results will be reported when the work has been completed.

SUMMARY

Ninety-four heifers surviving an outbreak of bovine hyperkeratosis in which 47 of 150 died, were bred after recovery to

determine their ability to reproduce. Each produced a calf. No unusual abnormality of estrus, length of gestation, birth, or birth weight of calf could be correlated with the severity of previous symptoms of bovine hyperkeratosis.

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Male Fertility.—Gonadogens, thyroid, various pituitary products, and four types of vitamin E were administered to a series of subfertile men with the object of improving their sperm counts. No improvement was noted in any of the cases.—*Brit. M. J.*, Dec. 22, 1951.

Cesarean Section Saves a Case of Hydrops Amnii

A 3-year-old Shorthorn heifer, pregnant about six months, developed an enlarged abdomen, then became ill. Rectal palpation confirmed the diagnosis of hydrops amnii. After paravertebral anesthesia much of the fluid was removed via cannula to avoid shock from a sudden loss of internal pressure. The heifer was then cast on her right side and the operation performed through a 12-in. incision in the left abdominal floor anterior to the udder and 4 in. lateral, but parallel, to the mammary vein. After removing the fetus and that portion of the membrane which would come readily, and closing the uterus with a double row of sutures, the operation was completed in

routine fashion. Penicillin and glucose solution were given daily for a few days after which recovery was uneventful.—*Irish Vet. J.*, Jan., 1952.

[Few, if any, reports of successfully treated cases of hydrops amnii in cows have been recorded. Surely some have occurred. If so, the JOURNAL would like to hear about them.—Ed.]

Further Reports of the Use of a New Method of Permanent Intramedullary Pinning

R. L. LEIGHTON, V.M.D.

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In the September, 1950, issue of the JOURNAL, I reported 3 cases in which a newly developed method of introducing a permanent intramedullary pin was used. It is hoped that these 3 additional cases may be of interest.

Case 4 (Fig. 1, 2, and 3).—On March 23, 1950, a spayed female mongrel Collie, 8 months old, was received in our clinic with

From the Rowley Memorial Hospital, Springfield, Mass.



Fig. 1—Case 4. Anterior-posterior and lateral x-ray of compound fracture of distal right radius and ulna.



Fig. 2—Case 4. Anterior-posterior and lateral x-ray taken immediately after surgery, showing shuttle pin in place.



Fig. 3—Case 4. Anterior-posterior and lateral x-ray showing degree of healing at time of removal of yucca splint twenty days after surgery.



Fig. 4—Case 5. Anterior-posterior and lateral x-ray of compound fracture of the distal left radius and ulna.



Fig. 5—Case 5. Anterior-posterior and lateral x-ray taken immediately after surgery showing shuttle pin in place.

a compound fracture of the distal right radius and ulna. Immediate first aid treatment was instituted. Demerol was given and penicillin injections were begun. The next day, a special shuttle pin was introduced and the leg placed in a yucca board splint. Penicillin was given until the day of discharge, March 30. The temperature had returned to normal two days previously, never having gone above 102.6 F. The dog was sent home wearing the splint. She was returned in one week for a check up, and again a week later at which time the splint was removed. The fracture had healed satisfactorily. The owner reported in a short time that there was no noticeable difference between the two front legs. In February, 1951, I saw the dog and she had perfect use of the limb.

In September, 1951, the dog was destroyed because of her propensity for chasing cars and bicycles—an unfortunate occurrence for the purpose of scientific observation, but certainly demonstrating that the limb functioned satisfactorily.

Case 5 (Fig. 4 and 5).—On June 25, 1950, we received a 3-month-old female Shepherd

and Collie cross in our clinic with a compound fracture of the distal left radius and ulna. Here again we instituted penicillin therapy, and demerol was given along with primary wound treatment and a temporary splint. The next day, a special pin was inserted. The dog's temperature ranged between 102.6 and 103. F. until June 30, at which time it became normal; two days later, penicillin was discontinued. The leg



Fig. 6—Case 6. Anterior-posterior and lateral x-ray of a mid-shaft fracture of the left radius and ulna.



Fig. 7—Case 6. Lateral x-ray taken immediately after surgery showing pin in place.

was kept in a yucca splint. Redressing was done on the first of July and the splint was removed July 7. The puppy used the leg well by the time it was discharged from the hospital.

In February, 1951, a check-up revealed that the dog was doing well and was not obviously lame. The owners did report that in extremely cold weather she favored the leg slightly.

Case 6 (Fig. 6 and 7).—On the same day, June 25, 1950, a year-old male part Collie with a fracture of the mid-shaft of the left radius and ulna was presented. On the next day, at operation, it was found that due to the bowed form of the radius, it was more practicable to use a long and relatively soft pin which was worked into place by means of a small pointed dental forcep rather than by traction on a suture as had been done with the "shuttle" pins used in the previous cases.

The dog ran a temperature of 102.4 to 102.8 F. for five days and received penicillin until it returned to normal. The leg was kept in a Thomas splint. Discharged from the hospital on July 9, it was returned for two check-ups. On the last, July 19, the splint was removed. The leg was well healed and functional.

In March, 1951, this dog was again presented in our clinic, this time with a partial fracture of the opposite (right) radius and ulna. Since no displacement was present, treatment consisted of splinting in a yucca splint. During the healing of this fracture, we had an admirable opportunity to observe the opposite leg. It had showed no lameness or observable change according to the owners. Under the strain of carrying a lot of additional weight during the time the new fracture was healing, it did favor the limb somewhat.

Conclusion.—It is felt that the use of special permanently introduced intramedullary pins is a feasible and satisfactory method of treatment for fractures of the radius and ulna.

Summary.—Reports on the use of a new intramedullary pinning method in three additional cases are given with follow-ups.

True epilepsy does not occur in dogs. Epileptiform fits are, however, of frequent occurrence.—*Irish Vet. J.*, Oct., 1951.

Two New Breeds of Meat-Type Hogs

Two new breeds of meat-type hogs have been developed and admitted for registry by the Inbred Livestock Registry Association of St. Paul, Minn. One of these, the Beltsville No. I, was developed in the Bureau of Animal Industry experimental herd at the Agricultural Research Center, Beltsville, Md. The other, Maryland No. I, was developed cooperatively by the Maryland Experiment Station and the Bureau of Animal Industry at Queenstown, Md. Both carry a large percentage of the blood of Danish Landrace hogs, a breed imported in 1934, primarily for experimental purposes.

The Beltsville No. I was developed from crosses made in 1934. It carries approximately 75 per cent Landrace and 25 per cent Poland China blood and is about 35 per cent inbred. The color is black with white spots.

The Maryland No. I line was established in 1941 and carries approximately 62 per cent Landrace and 38 per cent Berkshire blood, and is about 30 per cent inbred. They are black and white spotted and intermediate in conformation between the Landrace and Berkshire.

Dressed weight of both new breeds is about 80 per cent of live weight, which is about the same as for the average market hog, but the two new breeds have a higher proportion of lean to fat.

A blood bank, plasma bank, and a bone bank for small domestic and furbearing animals have been set up at the Ontario Veterinary College. A regime of aseptic technique has been instituted in the small animal surgery with extremely gratifying results.—*Rep. Ontario Vet. College*, 1950.

Contrary to previous assumptions, the nonbreeding season in sheep is not due to a low gonadotropic potency of the pituitary, but may be caused by changing proportions or secretion rates of follicular-stimulating and luteinizing hormones.—*W. J. Kamm-lade, Ph.D., University of Illinois*.

Tomatoes can be made to yield sex hormones and may become a plentiful, cheap source of cortisone.—*Am. Pharm. A.*, Dec., 1951.

A Practical Calf Dehorner

S. J. ROBERTS, D.V.M., M.S.

Ithaca, New York

The farming country around Ithaca, N. Y., is principally devoted to dairying. Most of the many dairy herds are commercial, averaging 15 to 30 milking cows that raise practically all of their own replacements. Since the cows are confined in stanchions or pen-type stables for approximately six months of the year, and only allowed restricted amounts of exercise in small barnyards during these winter months, horn injuries are frequent and common in occurrence. Dehorning of yearling and 2-year-old heifers and adult cows was usually done in a majority of these herds by the ambulatory clinic. This work even though done under local anesthesia is unpleasant, hard, and dirty, and requires extra help that we fortunately have in our senior students. The farmers have been repeatedly encouraged to dehorn their calves at an early age to make the dehorning operation simpler, easier, and safer.

The use of the caustic stick, potassium hydroxide, or caustic paste have been recommended most frequently. Very few farmers adopted this method because of poor results; either too much or too little caustic was used, calves were often too old at the time of dehorning, or they would not be tied separately and would rub the caustic off on other calves or a cow. A number of farmers tried the caustic, antimony trichloride, and collodion combination with poor results mainly because the material was not applied properly and early enough. The hot iron used widely in the West for range cattle is not satisfactory, since the danger of fire in the average barn is great. Also, seldom are there enough calves of the proper age at one time to make the operation practical. The electric dehorner has been tried by a number of farmers. Some delay too long before using it. Others complain of the time the operation takes and some believe it to be too painful. Thus, little progress has been made in trying to get farmers to dehorn their own calves.

For the past five years, various calf dehorners have been tried by our ambulatory

clinic in an attempt to reduce the large number of adult cattle we are requested to dehorn each year. The small horn gouge, the large calf dehorners with handles, and the tubular calf dehorners sold commercially were not entirely satisfactory. For a



Fig. 1—Calf dehorner made of steel tubing, with a rounded wooden handle.

year or so, we used a 1¼-in. wood chisel gouge. It worked satisfactorily except that it was too large and unwieldy. We finally tried a modified tubular horn gouge. After several changes over a period of two or three years, the present dehorner seems to be nearly ideal for our practice (fig. 1).

This calf dehorner is made of steel tubing with an outside diameter of 1 in. A 1½ by ¾ in. cut-out is made in the side 1¼ in. above the cutting edge to facilitate removal of the occasional horn bud that becomes lodged in the instrument. A rounded wooden handle, 1½ in. in diameter is fitted in the tube and fastened by a pin. The cutting edge is hardened and ground to a sharp keen edge. Two, approximately 3/32-in. slots or nicks are ground with a saucer grinding wheel on the opposite sides of the cutting edge. When in use, these sharp notches act like the cutting edges on a trephine and make for easier circular cutting of the skin around the base of the horn bud.

Calves 2 weeks to 3 months of age can be dehorned in less than half a minute. No clipping of the hair or antiseptic is required. With one man straddling the neck of these calves, backing them into a corner, and pulling the muzzle and head from one side to the other, the operator, helping hold the head steady by grasping the ear toward him, can readily locate the horn buds and dehorn the calf. For calves under 1 month of age where no horn has developed, the

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Fig. 2—The dehorner is fitted over the horn bud or, in the case of older calves, over the small horn.

horn bud may be gouged out together with its surrounding skin down to the skull with



Fig. 3—Several circular twists cut through the skin to the skull, and the isolated horn with its corium is gouged out by turning the dehorner sideways and pushing the cutting edge through the horn base.

a quick upward or downward thrust of the dehorner. For older calves, the dehorner is placed over the small horn and given several circular twists. This motion cuts through the skin to the skull. The isolated horn with its corium is then gouged out by turning the dehorner sideways and pushing the cutting edge through the horn base (fig. 2,3,4).

Rarely in older calves bleeding may be



Fig. 4—The completed operation.

excessive and a pressure pack of gauze or cotton must be applied to the area and held manually for four to five minutes or held in place by a bandage wrapped completely around the head and throat region. In none of the hundreds of calves dehorned by this method has any wound infection resulted. In screw-worm areas, proper precautions to prevent infestation should be taken during the summer months. In approximately 400 calves dehorned in this manner during the past three years, only 1 has died as a result of the operation. The cause of death was hemorrhage that could have been prevented if the owner had watched the calf more closely.

This service of dehorning calves at a nominal charge at the time of other calls to the farm is greatly appreciated by the farmer, and reduces the number of older heifers and cows that must be dehorned later when the operation is more difficult and dangerous.

A New Barbiturate in Obstetrics

In obstetrics, the search for an anesthetic agent which will combine the qualities of simplicity, relief of fear and pain, and safety for both mother and child still continues. In the meantime, these authors report on the use in 400 cases of intravenous pentobarbital sodium (nembutal®) which they conclude offers a rapid form of anesthesia with a relatively good margin of safety. Maternal blood loss and infant welfare are apparently not affected. Although it is not the ideal agent, pentobarbital, they believe, is a useful addition to the list of agents upon which the obstetrician may draw.—*North Carolina M. J.*, Sept., 1951.

Hormones for Udder Growth and Lactation

Pellets containing 4 Gm. of progesterone and 2 Gm. of diethylstilbestrol were implanted in nonbreeding heifers and cows in an effort to induce optimal udder growth and lactation. These pellets were removed 104 days later. The heifers produced 331 and 323 lb. of butter fat and 6,622 and 6,681 lb. of milk, respectively. One cow reached a peak of 80 lb. of milk daily and produced 163 lb. of butterfat during her

first sixty-one days of milk. Factors which are believed to influence experimentally induced udder growth and lactation include (1) ratio of the two hormones; (2) total amount of hormones absorbed; (3) duration of implantation; (4) site of implantation; and (5) character of the tablets. Progesterone is believed necessary for optimal udder growth and for overcoming undesirable features of unhindered diethylstilbestrol stimulation.—*W. F. Riley, D.V.M., et al., Michigan State College.*

Reproduction of Ewes Increased by Adequate Ration

The production from ewes which were bred in the same band but fed greater amounts of feed after breeding were different. The ewes in the band receiving most feed had 37 per cent more lambs than those receiving the least feed. There were 15 per cent more dry ewes in the group on the lowest level of feed in the same band as compared to those on the highest level. There were more twins born in the groups on the higher level of feed. There was great difference in the reaction of 2-year-old ewes to the levels of feeding. The difference between the percentage of dries in the groups within bands was 46 per cent. It appeared that ewes responded to higher levels of feeding after breeding as well as before and during breeding.—*Feedstuffs*, 23, 1951: 47, abstr. in *Biol. Abstr.*, Jan., 1952.

Correction in the 1951 "Proceedings Book"

Illustrations (fig. 1, 2, 4, 5) in the article, "The Pathology of Vesicular Stomatitis in Cattle," by T. L. Chow, Ph.D., R. P. Hanson, Ph.D., and S. H. McNutt, D.V.M., Madison, Wis., are transposed.

On p. 119, fig. 1 should have been transposed to fig. 5 (p. 122); on p. 120, fig. 2 should have been transposed to fig. 4 (p. 121); fig. 3 is correct on p. 121; on p. 121, fig. 4 should have been transposed to fig. 2 (p. 120); fig. 5 on p. 122 should have been transposed to fig. 1 (p. 119).

Infected wounds, particularly chest wounds, tuberculous abscesses, and diabetic gangrene, are cleaned up and heal faster when treated with two chemicals from hemolytic streptococci,—streptokinase and streptodornase.—*Am. Pharm. A.*, Dec., 1951.

CLINICAL DATA

Artificial Respiration in Large Animals

A. DONALD RANKIN, D.V.M., M.S.; NICHOLAS H. BOOTH, D.V.M., M.S.; and
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A SATISFACTORY and practical technique of administering artificial respiration to large animals has not been described in veterinary literature. Due to the size of the large animal, application of manual artificial respiration is not satisfactory and consequently the animal succumbs to anoxia.

Jones¹ recognized that improved methods of resuscitation are necessary in large animals whenever asphyxia occurs.

Artificial respiration was first employed as a resuscitative measure by Brodie, cited by McIntyre,² Waterton,³ and Clanny,⁴ in the beginning of the nineteenth century. These early investigators experimented on large animals, such as horses or donkeys. They established the fact that artificial respiration, when administered for a sufficient period, restored natural respiration after curare had paralyzed the respiratory musculature.

In 1879, Waterton³ reported a "wourali" poison experiment on a donkey that he performed in 1814 in London, England. The animal received the drug in the shoulder and appeared dead after

ing to Waterton, and peered about, but when inflation was discontinued, the donkey sank once more into apparent death. A second application of artificial respiration for two hours revived the animal. The donkey recovered from the experiment and lived nearly twenty-five years.

Clanny,⁴ in 1839, also reported similar experiments on 2 donkeys, using artificial respiration to combat asphyxia due to respiratory muscular paralysis. In one instance, he claimed that it required seven and one-half hours of artificial respiration to revive the animal; and in the second animal, when one-fourth of the original dosage of crude curare was used, it required two hours of artificial respiration for restoration of natural respiration.

In studies made on curare in the horse,¹ resuscitative measures were necessary on several occasions. Manual artificial respiration was attempted but proved to be inadequate in providing proper ventilation and the animals expired from asphyxiation. It became apparent that a more satisfactory technique of providing adequate ventilation in these animals was necessary whenever asphyxia occurred.

CONSTRUCTION AND USE OF BELLOWS

In view of the early experiments of Waterton and Clanny, it was decided to construct a bellows for administering artificial respiration.

The bellows was constructed from 1/2-in. plywood connected at the apex with a piano hinge. The expansion part of the bellows was made of synthetic sheet plastic capable of withstanding 30 lb. of pressure per square inch. The bellows was equipped with an inlet and outlet valve obtained from a war surplus gas mask. Chrome molding, screws, and synthetic plastic glue were used to secure the sheet plastic to the plywood. Pipe fittings and gas mask tubing (war surplus) were used to conduct the air to the animal. Figure 2 illustrates the parts and measurements in detail.

According to Dukes⁵ the tidal air of a

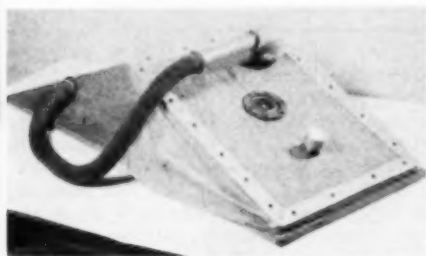


Fig. 1—The bellows used in artificial respiration of large animals.

ten minutes. Artificial respiration was given through a tracheostoma for two hours by means of a bellows. The donkey lifted its head, accord-

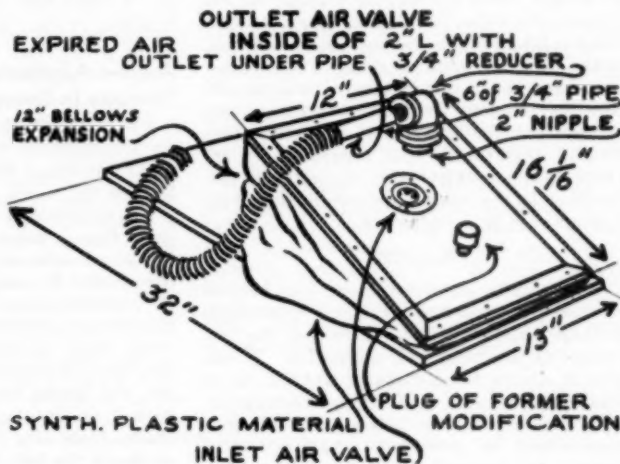
From the Department of Physiology, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins. Dr. Rankin is professor and head, Dr. Booth is assistant professor, and Mr. Sullivan is a technician in the Department of Physiology.

horse is about 6 liters. In order that adequate ventilation could be supplied, the bellows was constructed with a capacity of 20 liters. Good judgment was necessary in using the bellows lest pulmonary emphysema be produced, especially if the bellows was operated at full stroke or too rapidly.

Artificial respiration was used a total of 63 times on 12 horses that suffered from respiratory embarrassment. The length of time artificial respiration was carried out ranged from one to thirty minutes before restoration of natural respiration.

The technique employed in the horse was

Fig. 2—Diagram of the bellows constructed for use in the artificial respiration of large animals.



Because of the long, overhanging soft palate in the horse (Sisson and Grossman,⁶ 1938) which occludes the oral cavity from the pharynx, insertion of the bellows tubing into one of the nostrils was sufficient to carry on artificial respiration if the other nostril was occluded. Occlusion was accomplished by means of a soft rubber ball, or by closing it off with the palm of the hand.

The bellows is filled with air through the inlet air valve by an upward stroke. When the bellows is full of air, a downward motion, with the expired air outlet opening occluded by a finger, forces air into the lungs of the horse. At the end of the downward stroke, the finger occluding the expired air outlet is removed from the air outlet opening and the recoil of the horse's lungs is sufficient to force the expired air through this opening. At the same time that the exhaled air is being forced out of the lungs, the air outlet valve closes to prevent filling of the bellows. During the exhaling process, the bellows is again filled with air so that the artificial respiration cycle can be resumed.

less complicated and more quickly put into operation than performing intratracheal intubations. Prior to administering artificial respiration to the horse by the method described, intubation of the trachea was performed through one nostril but was not satisfactory since the intratracheal tube occasionally passed down the esophagus. Application of artificial respiration as described for the horse was not applicable to the cow. After employing this apparatus on an over-anesthetized bull, it was observed that the rumen was being inflated instead of the lungs. This made intratracheal intubation a prerequisite to artificial respiration in this species.

An opportunity to try intratracheal intubation in the bovine species was made possible on a young Jersey bull.* The animal was anesthetized with chloral hydrate followed with an intravenous injection of curare to paralyze the respiratory musculature. An intratracheal intubation was performed through the mouth of the bull with

*Acknowledgement is given to Drs. R. W. Davis and R. Franson of the anatomy department for their cooperation in permitting use of the bull prior to embalming.

a "koroseal" tube 2.5 ft. long and 1 in. in diameter. At one end of the intratracheal tube, a rubber cuff was constructed similar to ones used on human intratracheal tubes. After the intratracheal tube was inserted into the trachea, the rubber cuff was inflated with a 50-cc. syringe so that the cuff fit snugly, thus preventing leakage of air around the tube. Following the intratracheal intubation, the bellows was connected to the tube for administering artificial respiration. When respiratory muscle paralysis was complete, artificial respiration was carried out for thirty-five minutes before natural respiration was resumed. It appears that administration of artificial respiration to the bovine species by this technique would be satisfactory.

RESULTS

The results obtained from the bellows method of employing artificial respiration to large animals demonstrates that the procedure is practical and successful. If one should desire to administer oxygen as an additional adjunct to artificial respiration, an attachment to the bellows for this purpose could be provided. Application of oxygen for resuscitative measures in large animal practice will doubtless receive considerable attention in the future as it has in recent years in small animal practice.

SUMMARY

1) Practical methods are described for administering artificial respiration to large animals by using a bellows.

2) In 12 horses suffering from respiratory paralysis, artificial respiration was employed a total of 63 times to restore natural respiration.

3) In 1 young Jersey bull, artificial respiration was used for thirty-five minutes before natural respiration was restored.

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A New Approach to Phenothiazine Therapy in Sheep

Phenothiazine has been in general use as an anthelmintic for the treatment of the gastrointestinal nematodes of sheep during the last ten years.

An experiment has been carried out to show that a measure of control of gastrointestinal nematodes of lambs can be accomplished by dosing the ewes with 30 Gm. of phenothiazine ten days prior to commencement of lambing and continuing with small daily amounts of phenothiazine in the food for nine weeks. When 5½ months old, the lambs from the treated ewes had gained an average of 7 lb. more than the lambs from the untreated ewes. Blow-fly strike of the tail did not occur in the lambs from the dosed ewes, whereas 6 out of 22 lambs in the control flock were struck on the tail. When weight gains of the unstruck control lambs were compared with the lambs from the dosed ewes, there was still an average weight increase of 5.7 lb. in favor of this method of phenothiazine therapy.—*Vet. Rec.*, Dec. 29, 1951.

Effect of Starvation on Phagocytosis in Vivo.—Rats well fed for four weeks were deprived of food for thirty-six hours, and phagocytosis by leukocytes, obtained by injecting a suspension of *Staphylococcus albus* into the peritoneum, was compared with the phagocyte activity of leukocytes from continually well-fed rats. The phagocyte activity was determined by counting the number of bacteria engulfed per phagocyte per unit of time (Wright) and by determining the percentage of leukocytes showing phagocytosis (Hamburger). The starved rats produced twice the percentage of phagocytic leukocytes which engulfed three times more bacteria than the phagocytes of the fed animals.—*Proc. Soc. Exptl. Biol. and Med.*, March, 1951, abstr. in *Biol. Abstr.*, Jan., 1952.

Experimental Transmission of *Vibrio Fetus* in Diluted Semen and by Contact

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IT WAS THE PURPOSE of this study to determine if animals would become infected when inseminated artificially with semen containing *Vibrio fetus*, and to examine the possibility of contact exposure.

Although McFadyen and Stockman¹ and Smith^{2,3} were able to produce vibriosis in cattle by intravenous injection of live *V. fetus* cultures, little experimental data are available to shed any light upon the actual methods of field transmission of the organism. Rhoades and Hardenbrook,⁴ Terpstra and Eisma,⁵ and Plastridge *et al.*⁶ were all unsuccessful in producing evidence of infection by administering *V. fetus* by the oral route. The possibility of the bull as a factor in the spread of vibriosis was suggested by Plastridge *et al.*⁶ and has been confirmed by circumstantial evidence observed in the field by several veterinary practitioners. The first to report the isolation of *V. fetus* from the semen of a bull was Stegenga.⁷ All of 4 heifers reported by Terpstra⁵ as bred naturally by a known infected bull showed subsequent evidence of vibriosis. The latter author considered the bull as the primary method of transmission.

EXPERIMENTAL

Animals.—Four Guernsey and 8 Jersey heifers, from the University of Connecticut herd and ranging in age from 8 to 14 months, were placed in a barn about 3 miles from the main herd in August, 1949. The animals were permitted to feed, loaf, and exercise together in the open barn and adjacent paddock.

Procedure.—The heifers were divided into two groups with due consideration being given to an equal distribution as to breed and age. Beginning in January, 1950, as the individuals came in heat and each time they were noticed in heat thereafter, each animal of one group was artificially inseminated with semen in "Ortho" liquid diluter, and each animal of the other group with semen in the same type diluter to which viable *V. fetus* cells had been added. The infected semen was prepared by adding 0.1 ml. of a suspension of *V. fetus* cells having a density rating of about 5 on the McFar-

land nephelometer scale, to 2.0 ml. of diluted semen. Of this material, 1.0 ml. was used in making any single insemination. The suspension was prepared by adding cells from 48-hour-old cultures of *V. fetus* to sterile physiological saline. Examinations for pregnancy were made by rectal examination thirty-two to forty days following the last service.

Blood samples were taken and examined for evidence of *V. fetus* and *Brucella abortus* agglutinins twice a month during the period from July, 1949, through August, 1950, and once during September and October, 1950. Swabs for cultural examination were collected aseptically through a sterile glass speculum three times during May, 1950. Each animal was tested once in July, 1950, by the tampon method reported by Szabo.⁸

RESULTS

Service Records.—Four of the 6 heifers inseminated with semen containing *V. fetus* conceived after an average of 3.8 services and calved normally. Two heifers failed to conceive and were slaughtered. One slaughtered heifer (No. 4) showed a completely occluded cervix and the records revealed that the inseminating catheter had never been passed completely through it. The second slaughtered heifer (No. 12) showed two small folds of tissue in the cervix. This heifer had been catheterized, though with difficulty; otherwise the organs of No. 12 were apparently normal. Table 1 gives the service data for the infected group.

All of the 6 heifers in the control group

TABLE 1—Heifers Inseminated with Diluted Semen Plus *V. Fetus*

Animal	No. of services	Pregnancy confirmed	Returned to heat	Calving
3	4	Yes	No	Normal
4	4	No	—	Slaughtered
5	3	Yes	No	Normal
7	3	Yes	No	Normal
11	5	Yes	No	Normal
12	7	No	—	Slaughtered

Average number of services per conception = 3.8.

Average number of services when No. 12 (normal on autopsy except for two folds of tissue in cervix which made her difficult to catheterize) is included = 4.4.

No. 4 had occluded cervix on autopsy. It was never possible to catheterize this animal.

Supported in part by funds provided by the Research and Marketing Act of 1946 for the regional research project NE1, Sterility in Dairy Cattle, and the Ralph E. Ogden Foundation.

From the Department of Animal Diseases, Storrs Agricultural Experiment Station, University of Connecticut.

The authors are indebted to Mr. L. F. Williams for careful supervision of the blood serology reported; to Mr. R. E. Johnson for providing, and to Mr. G. Farrington for care of, the experimental animals.

conceived after an average of 1.8 services. Two of the 6 heifers (No. 1 and 8) returned to heat at fifty-eight and 118 days, respectively. These heifers apparently aborted, although a fetus was not recovered in either case. Evidence to be presented in this paper will show that 1, and possibly

TABLE 2—Heifers Inseminated with Normal Diluted Semen¹

Animal	No. of services	Pregnancy confirmed	Returned to heat ²	No. of repeat services	Calving
1	1	Yes	58 days	1	Normal
2	1	Yes	No	—	Normal
6	1	Yes	No	—	Normal
8	2	Yes	118 days	2	Normal
9	3	Yes	No	—	Normal
10	5	Yes	No	—	Normal

¹Control group in *V. fetus* infection experiment. ²Indicates early abortion. Average number of services per conception = 1.8. Average number of services when rebreeding of No. 1 and 8 are included = 2.5.

both, of these animals had become infected with vibriosis. One of the heifers which aborted conceived from one service and the other after two services from the heat after the first return heat observed. All 6 heifers then carried normal calves to term. Table 2 gives the service data for the control group.

Blood Tests.—All 12 heifers reacted negatively at the start, and continued to do so throughout the study, to blood serum-agglutination tests for brucellosis. All 12 heifers were negative to the blood serum-agglutination test for vibriosis at the start of the experiment. Of the 6 heifers in the group inseminated with infected semen, 1 reacted negatively throughout, 3 gave suspicious reactions, and 2 gave positive reactions to the vibriosis blood test some time during the course of the study.

Of the control heifers, 1 reacted negatively throughout, 4 gave suspicious reactions, and 1 a positive reaction at some time during the course of the study.

It was of interest to note, however, that suspicious reactions were observed in the infected group within a month after the start of inseminations, while no suspicious titers were observed in the control group until two months after inseminations were started. Also, the number and magnitude of the reactions were higher in the infected

group. Table 3 gives the vibriosis blood test results.

Cultural Tests.—*Vibrio fetus* was isolated from swabs taken from the cervical areas of 2 heifers (No. 3 and 11) of the infected group and 1 heifer (No. 8) of the control group. Heifer No. 8 is the one which returned to heat at 118 days, and it was surmised that the culture was taken shortly after the act of abortion, since it was only a few days before her return to heat.

TABLE 3—*Vibrio Fetus* Serological and Cultural Tests on Heifers Inseminated with Normal and *Vibrio Fetus*-Infected Semen

	Anim. No.	Blood					Tampon		Cultural		
		J	F	M	A	M	J	July	5/16	5/22	6/27
Normal	1	N	N	N	S	N	N	S	N	N	N
	2	N	N	N	S	S	N	S	N	N	N
	6	N	N	S	S	S	N	N	N	N	N
	8	N	N	N	N	N	N	S	N	V.f.	N
	9	N	N	S	R	N	N	N	R	N	N
Infected	10	N	N	S	S	N	N	N	N	N	N
	3	N	N	N	N	S	N	N	R	N	V.f.
	4	N	S	S	S	S	N	S	N	N	N
	5	N	S	S	R	R	N	S	N	N	N
	7	N	N	N	N	N	N	N	R	N	N
	11	N	S	N	S	N	N	N	R	V.f.	N
	12	N	N	N	S	R	N	N	N	N	N

Tampon Test.—Of the group inseminated with infected semen, 3 heifers reacted positively and 1 suspiciously to the tampon-agglutination test. One heifer of the control group (No. 9) reacted positively to this test, required three services before conceiving, and had also reacted positively at one time to the blood test (tables 2 and 3). These two conditions indicated that she was infected with *V. fetus*. Table 3 also gives the results of cultural and tampon tests.

DISCUSSION

Based on the vibriosis blood-agglutination, cultural, and tampon tests, and service records, it may be concluded that vibriosis can be spread through artificial insemination with *V. fetus*-infected, diluted semen. It is encouraging to note that many artificial breeding associations are blood-testing bulls for evidence of vibriosis and withdrawing from active service positive and suspicious bulls until such time as their blood reactions return to negative. A report by Plastridge and Easterbrooks¹¹ indicates that the addition of at least 500 μ of streptomycin per milliliter of diluted semen should render *V. fetus*, if present in

diluted semen, incapable of producing infection.

Abortions, positive blood, cultural, and tampon tests on some animals of the control group also clearly indicate that vibriosis can be transmitted by contact.

The actual method of contact transmission was not established. Since no one has reported the production of infection by the oral route, it appears possible that the method of contact transmission of vibriosis in cattle may be that of vulva to vulva. Such spread could be accomplished by animals licking their own vulvas and the vulvas of one another. It also seems possible that vulva-to-vulva transmission could be carried out by an insect vector such as the fly.

SUMMARY

Observations made on 12 heifers, 6 inseminated with *Vibrio fetus*-infected diluted semen, and 6 inseminated with normal diluted semen showed that:

1) Vibriosis can be transmitted through artificial insemination with *V. fetus*-infected semen.

2) Vibriosis can be transmitted by contact.

It is postulated that contact transmission may occur from vulva to vulva by animals licking one another and/or insect vectors.

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Newcastle Disease in Peacocks

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Utrecht, Netherlands

During a tour of the United States from July 18 to Sept. 8, 1951, with the special purpose of studying poultry diseases, one of us (J.J.) had the pleasure of a discussion with Dr. Beaudette of New Brunswick, N. J. Mention was made of the occurrence of Newcastle disease in the Netherlands.

First described by Kraneveld in 1926 under the name of pseudo fowl plague (*Nederl. Indisch. Blad. voor Diergeneesk.*, 38, 1926: 448), Newcastle disease (N.D.) had never occurred in our country before 1949. In the beginning of that year, however, the disease was diagnosed at our institute for the first time, in pheasants imported from Calcutta by air. Twenty-six birds arrived dead; the others died shortly afterward. Newcastle disease virus was isolated by egg cultivation and accurately identified by the Hirst and inhibition tests. We immediately reported this finding to the Veterinary Service, which, in alarm, took immediate precautions that were eventually successful in checking the disease—but not until one other group of birds had become infected.

Directly adjoining the zoological garden that had imported the pheasants, lay the garden of a private house. In this garden, some pheasants and peacocks were kept. These birds, separated from the zoological garden only by a wire netting, became ill. A dead peacock was sent to our institute and we were again able to isolate the Newcastle disease virus. The Veterinary Service was again informed and was able to eliminate the disease entirely.

Dr. Beaudette informed us that the num-

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ber of cases of this disease found in peacocks is so small that he thought it desirable to make this case known. As a result of the conversation with Dr. Beaudette we believe a short description of the second case of Newcastle disease in the Netherlands is of interest.

Case Report.—In his garden, Mr. X kept a few pheasants and peacocks in runs directly bordering on the zoological garden which had imported the infected pheasants from Calcutta; a wire netting was the only boundary. Shortly after the diseased pheasants had arrived, signs of illness occurred in Mr. X's pheasants and peacocks. A dead pheasant was sent to the institute. At the postmortem examination, nothing was found but a very slight enteritis and some hemorrhages under the horny lining of the gizzard. Bacteriological examination gave entirely negative results, but N. D. virus was isolated as follows: Four chicken eggs, that had been incubated for eleven days, were inoculated with brain material. Two days later, the allantoic fluid gave a positive hemagglutination which could be inhibited with known N.D. serum. The diagnosis of Newcastle disease could be based with certainty on these positive tests. Some further egg passages were carried out. This peacock strain is now kept by us at -20 C. After they had been informed of our findings, the Veterinary Service destroyed the still living birds. We were, however, able to observe the living peacocks.

On superficial examination, they did not look very ill. The owner pointed out that the birds sometimes walked backwards a few steps and then walked on normally. He said this was not normal. Careful observation showed that the peacocks now and then shook their heads with agitation; this too, the owner considered abnormal. He also thought that the mouth and the surrounding area was somewhat cyanotic. Of these three symptoms, the head shaking was the most striking. After the measures taken by the Veterinary Service, the entire infection from Calcutta was exterminated, but in the late autumn of 1949, our institute had to call attention to a third case of Newcastle disease. This case had an entirely different origin.

A commercial laboratory had imported the virus from France without first con-

sulting a competent authority. This virus was so injudiciously used that the laboratory's entire stock of chicks became infected and died. Fortunately, this source of infection could also be stopped.

After these 3 cases of Newcastle disease, identified in our institute, the threatening French enzoötic came still further north in our direction. The infection spread to Belgium and shortly after, through smuggling, to the Dutch provinces bordering Belgium.

We had the opportunity of studying locally the clinical symptoms of this fourth case of Newcastle disease in the Netherlands. The symptoms were violent, the course of the disease rapid, and the mortality high. The government Serum Institute at Rotterdam isolated the virus in this and in many subsequent cases. Thus, the Netherlands became infected only by the fourth case. As the enzoötic advanced through the country, it became clear that the disease was becoming much milder.

The Use of Procaine in Blood Transfusions

The need for rapid administration of blood to patients suffering from trauma or hemorrhage often precludes the possibility of preliminary warming of refrigerated blood. Such blood is stored at 4 to 6 C. At such temperatures, the transfusion produces constriction of the veins of an extremity so that at the end of fifteen minutes the flow slows down by about 80 per cent. By addition of procaine to the blood, this vasospasm is prevented, causing the vein to remain patent throughout the transfusion.—*New York State J. Med.*, Nov. 1, 1951.

A chemical missing link joining animal and plant life at the very beginning of evolution was suggested by discovery of a pigment, protoporphyrin isomer 9, which gives rise to both the hemoglobin of animal blood and the chlorophyll of green plants.—*Am. Pharm. A.*, Dec., 1951.

A new synthetic pain-killing drug, more powerful and longer acting than morphine and only three steps chemically from being synthetic morphine, was announced under the trade name, dromoran.—*Am. Pharm. A.*, Dec., 1951.

An Improved Technique for the Microscopic Diagnosis of Liver Fluke Infection in Cattle

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THE DIAGNOSIS of internal parasitism in livestock is of unquestionable importance, both in veterinary research and routine work. The finding and identification of parasitic ova in feces in microscopic examination helps to establish a definite diagnosis in the case under consideration.

The common liver fluke (*Fasciola hepatica*) is an important enzootic parasite of cattle in Puerto Rico. Identification of the fluke ovum is relatively easy, as it has a characteristic shape, size, and a single polar operculum. Because fluke ova are not suitable for flotation in solutions of high specific gravity, in which they collapse and become distorted, and because clumps of fecal particles mask the ova, making their observation and identification difficult, different techniques were studied in an attempt to obviate these problems.

The method for fluke ova identification as used by Oliver¹ requires little equipment and is simple in procedure. However, in pouring off the supernatant fluid, the sediment in the conical sedimentation glass is disturbed and there is the risk of throwing away part or all of the fluke eggs present, thus making the diagnosis of fascioliasis difficult.

Swanson and Hopper² have worked out a reliable technique for the quantitative examination of fasciola eggs. It, however, takes time, and several pieces of laboratory equipment are necessary.

To obviate some of the handicaps pointed out, an improvement to this method (Swanson and Hopper) has been devised, in which several steps are omitted and the rate of sedimentation is increased. The procedure follows:

- 1) Collect a gross sample of 500 Gm. of feces from the rectum.
- 2) Place the sample in a 1,000-cc. beaker and mix thoroughly.
- 3) Take a 5-Gm. sample (by taking small amounts from various parts of the gross sample),

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and put it into a 250-ml. Erlenmeyer flask. Add 100 ml. of tap water and shake until a uniform suspension is obtained.

4) Wash the sample through a series of wire screens (20, 40, and 60 squares to the linear inch) into a 1,000-ml. beaker, and transfer the suspension to a graduated glass cylinder, 1,000 ml. volume.

5) Add 1 ml. of a 1 per cent solution of aluminum sulfate to the fecal suspension and stir thoroughly. Let the mixture settle for ten to fifteen minutes. Siphon off the supernatant fluid to about $\frac{1}{4}$ in. from the bottom by using a bent glass tube without disturbing the ova-containing sediment. One end of a glass tube, $\frac{1}{8}$ -in. bore and about 12 in. long, is bent over a flame in a $\frac{1}{4}$ -in. "U" shape.

To siphon the supernatant fluid off, connect the long straight end of the glass tube to a vacuum filter pump with a piece of rubber tubing.

6) Add 1 ml. of standard tincture of iodine to the sediment; agitate to mix thoroughly and let stand for two minutes. The tincture of iodine stains the fluke egg a deep brown, making its identification easy.

7) Pour sediment into a 15-cc. centrifuge tube; centrifuge for two minutes at about 2,000 r.p.m.

8) Pour off all the supernatant fluid except for about 1 ml. This is left in so as to mix with the sediment and make it watery. Besides, the risk of pouring off fluke eggs is avoided by leaving this 1 ml. of fluid on top of the sediment.

9) Mix the sediment well with a wooden applicator and transfer some onto a clean glass slide with the applicator.

10) Put a cover glass over the specimen and examine microscopically, under both low and high power.

The advantages of this procedure in the diagnosis of a liver fluke infection through a fecal examination and microscopic identification of the ova, as compared with the method of Swanson and Hopper,² are:

- 1) Several steps and the use of pieces of laboratory equipment are eliminated.
- 2) The time required for the examination is greatly reduced, as the sedimentation takes only ten to fifteen minutes after adding 1 ml. of a 1 per cent solution of aluminum sulfate.
- 3) The addition of 1 ml. of a 1 per cent solution of aluminum sulfate, besides

greatly shortening the time needed for sedimentation, does not exert any deleterious effect upon the shape of the fluke egg; therefore it does not interfere with the identification of liver fluke ova.

4) The use of standard 7 per cent tincture of iodine eliminates the preparation of special 15 per cent tincture of iodine.

References

- ¹Oliver-González, J.: Personal communication.
²Swanson, Leonard E., and Hopper, Howard H.: Diagnosis of Liver Fluke Infection in Cattle. *J.A.V.M.A.*, 112, (1950): 127.

Do Your Part in the National Scientific Register Survey

Every veterinarian is urged to cooperate in the classification survey of veterinary personnel in the United States which the National Scientific Register will soon undertake, with AVMA assistance, as announced on page 225 of this issue. It has been just ten years since the last full-scale, detailed survey of veterinarians was made, then by the Procurement and Assignment Service of the War Manpower Commission shortly after the outbreak of World War II.

At that time, the assistance of the Association was sought and given since it had the most complete listing available of veterinarians in the U.S.; its address list was used in mailing the P. and A. questionnaire to the profession. That form was mailed in April, 1942, to some 12,000 veterinarians and, by November, 11,494 completed questionnaires had been filed. It was reported at the time that veterinarians had the best record, percentage-wise, of any of the three medical professions surveyed: 95.8 per cent returns.

It is sincerely hoped that the response from veterinarians will be equally good, if not better, this time. In 1942, there was the stimulus and urgency of a nation at war which, no doubt, influenced every patriotic citizen. In 1952, the urgency of the appeal may not be so great, but its importance is real because the data assembled from the National Scientific Register survey will have great value in planning and projecting effective utilization of veterinary manpower to meet civilian, civil defense and, possibly, military needs of the future.

Thus, the returns from this N.S.R. questionnaire will be significant to veterinarians

individually and collectively. When you receive yours, please fill it out carefully and completely and return it promptly.

Intracaudal and Subcutaneous Vaccination of Calves with *Brucella* Abortus, Strain 19

One hundred and thirty-eight unexposed heifer calves from 7 to 10 months old were divided into two similar groups, each with about 33 calves 7 to 8 months old and 36 calves 9 to 10 months old. A third similar group was maintained as controls. Using a lyophilized vaccine, procured from the U.S. Bureau of Animal Industry, one group was given 5.0 ml. subcutaneously in the costal region, the other group 1.0 ml. injected deeply into the fibrous tissue about half an inch from the tip of the tail. The latter caused a local reaction plus a palpable swelling of one or both ischiatic lymph nodes in most animals for about three weeks.

Frequent agglutination tests revealed a maximum reaction for all at the third week, with the titer of the intracaudal group being almost twice as high as the group injected subcutaneously; the older heifers developed a titer about 40 per cent higher than the younger ones. All were kept in an uncontaminated environment and re-tested twelve months later. This test revealed a negative titer in the younger subcutaneous group; 29 per cent were negative in the older intracaudal group. None were above the minimum positive titers.

The heifers were bred about a year after being vaccinated, and later 78 which were considered positively pregnant were exposed to natural infection, while 51 were continued in uncontaminated quarters. Thirty per cent of the exposed heifers apparently developed brucellosis, judged by strong agglutination titers, so were discarded. No significant change occurred in the titers of the others in either group. —*Austral. Vet. J.*, Dec., 1951.

Vesicular exanthema is the one disease of swine in Los Angeles County with a history of being most frequently found in garbage-fed hogs.—*Los Angeles County (Calif.) Livestock Department*, 1951.

Spasm of the Colon and Diarrhea in Small Animals

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EVEN A CURSORY review of veterinary and medical literature serves to emphasize the frequent incidence of colon dysfunction characterized by smooth muscle spasm, colicky pain, and diarrhea. It is also evident that about as many terms are used to designate these conditions as there are colon patients in a small animal practice: spastic colon, nervous bowel, unstable colon, intestinal colic, irritable colon, nonspecific colitis, spastic colitis, mucous colitis, colicky diarrhea, and enteritis, to name but a few. In addition, there is spastic constipation.

PHYSIOLOGY OF NORMAL COLON

The physiologist would helpfully suggest that we practitioners mobilize our knowledge of at least the broader aspects of the anatomy and physiology of the normal colon before we come to grips with the clinical and therapeutic problems of the "sick" colon. References to any standard physiology textbook¹ brings out essentially this: The colon is a muscular tube, lined with mucous membrane, which receives the liquid content of the small intestine, partially dehydrates this material, and then passes it along to the rectum for evacuation. The muscles of the colon are smooth (unstriated) and fall into three categories—sphincter, radial, and longitudinal. The contracted iliocolic and internal anal sphincters close off both ends of the colon while the radial muscles of the bowel wall churn the colon content to facilitate absorption of its water and salt and other soluble constituents. Several times daily the internal anal sphincter relaxes while the longitudinal muscles create a wave of massive peristalsis which delivers the semi-solid product of the colonic dehydration to the rectum. Also several times daily, the iliocolic sphincter relaxes to allow the colon to be filled with liquid material from the ileum. The filling, churning, and emptying muscular activity in the colon is primarily regulated by the opposing influences of sympathetic and parasympathetic compo-

nents of the autonomic nervous system. Stimulation of the sympathetic innervation, or depression of the parasympathetic, decreases the churning and peristalsis and "tightens" the sphincters. Conversely, parasympathetic stimulation, or sympathetic depression, causes increased churning and peristalsis and relaxes the sphincters.

In brief, the colon is a muscular alimentary organ of dehydration which is quieted and "dried" by stimulation of its sympathetic nerve supply and excited and "wetted" by stimulation of its parasympathetic nerves. When undiseased and functioning normally, the colon is subject to the proper balances of sympathetic and parasympathetic influences. It is receiving material from the small intestine in proper amounts and at correct intervals. It is neither hurrying this material along so fast that too little absorption of fluid takes place and diarrhea results, nor retaining its contents too long so that there is excessive dehydration and the formation of the hard, nodular feces of constipation.

THE "SICK" COLON

The functionally abnormal "sick" colon the veterinarian is called upon to treat is one whose nervous control mechanism has been thrown out of balance. This nervous imbalance is often due to a mechanical, chemical, food, bacterial, or viral agent which irritates the wall of the colon, or to a general nervous state which makes the colon hyper-responsive to its normal content. When an area of the bowel wall is irritated, afferent nerve endings within the area are stimulated and send sensory nerve impulses to a nerve center which regulates colonic muscle activity. This center, in turn, is activated to initiate efferent regulatory motor impulses which reach the muscles of the colon over autonomic nervous pathways. If a regulatory center decides that the abnormal state of the bowel can best be dealt with by speeding up emptying of the colon, it stimulates efferent parasympathetic fibers leading to the colon. The end result of this is that the colon delivers watery feces in excessive amounts and at

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abnormally short periods to the rectum. And the rectum, reflexly stimulated when it becomes distended by the colonic discharge, evacuates its overfluid content, and the patient has diarrhea. Furthermore, when the parasympathetic is strongly stimulated, the muscles of the colon tend to go into spasm, and the patient experiences colic, colicky pain, and straining during defecation. Or, in some cases, the spasticity of the bowel results in spastic constipation or alternate periods of diarrhea and constipation. Clinically, the "hardening" of the bowel due to spasm is made clearly evident by palpation, or proved by fluoroscopy, and is made even more evident by the animal's expressions of colicky pain accompanying the spasm.

Possibly the most frequently encountered functional disturbances of the colon would be listed in our case histories as: hyperirritable colon, nervous bowel, idiopathic intestinal colic, spastic colon, intestinal impaction (including heavy infection by worms), or by the all-embracing acute enteritis. In many of these cases, there is a nervous factor which plays a significant role. The veterinarian should not lose sight of the fact that the pets he treats can and do acquire the "nervous bowel." These animals must share, at least to a degree, conditions of living which have made "colon-cripples" of their owners. Also, close breeding has produced an indeterminate number of canine neurotics. The aforementioned conditions are characterized by hyperirritability of the colon with resultant increased mobility, irregular and intermittent spasm, colicky pain which is often severe, and frequently diarrhea or alternate diarrhea and spastic constipation. The passage of a bowel movement tends to inaugurate even more severe cramps and vigorous straining. The colon is palpable and tender. Proctoscopy reveals nothing abnormal. Laboratory tests, except in the cases of worms, usually are not helpful. A barium enema and fluoroscopy unmistakably establish the state of the colonic musculature and the hyperirritability of the bowel. They also often visualize a foreign body in the colon.

The major spastic bowel disorders most often found in small animals which could be listed under the generic heading of specific enteritis are: acute diarrhea, spastic colitis, mucous colitis, enteric disease, and

spastic constipation. Although digestive disturbance may be a factor in these conditions, more frequently they are due to local irritation of the colon wall. Characteristically, the local irritant causes reflex stimulation of the colon, spasm, colicky pain, diarrhea or spastic constipation, or alternate diarrhea and constipation. Physical examination, radiography, and laboratory tests are depended upon to establish the condition and the cause.

In my practice, I am encountering more and more cases of mucous colitis, with its familiar symptoms of spastic, ropy, easily palpated colon, distended abdomen, paroxysmal attacks of severe colicky pain, evacuation of strings or casts of mucus from the bowel, and diarrhea or alternate diarrhea and constipation. In respect to the mucus, it should be emphasized that mucus *per se* is not clinically significant until it is present in the feces in abnormally large amounts, thus indicating that there is a considerable amount of local irritation of the colonic epithelium. Furthermore, it should also be emphasized that mucous secretion by the colon, unlike the activity of the colon's musculature, is not under nervous control. Best and Taylor¹ cite Florey's experiments which demonstrate that prolonged stimulation of parasympathetic or sympathetic fibers has no effect on mucous secretion. However, prolonged stimulation of the colonic mucosa by a local irritant caused a pronounced secretion of mucus to take place. On the basis of this, we should discontinue attempts to decrease the amount of mucus in the feces by giving belladonna or atropine.

It has been said that health is physiologic normalcy, illness is deviation from normalcy, and cure of illness results when the physiologically normal state is restored. Thus, it would seem logical to base treatment of the hyperirritable, hypertonic, or spastic colon and associated diarrhea or spastic constipation on measures that would tend to cancel out the excessive parasympathetic stimulation of the colon, reduce the irritability of the colon wall, destroy the irritant or remove it from the bowel and, in severe cases, support the patient to guard against or to overcome a state of collapse. These measures are:

ANTISPASMODIC DRUGS

Parasympathetic Depressants.—Belladonna and

atropine and its derivatives are representative of the parasympathetic antispasmodics. Homatropine is sometimes used in place of atropine, although its antispasmodic action is considered to be weaker. Side effects from belladonna, atropine, and atropine derivatives (drying of the nasal and oral secretions, mydriasis, dizziness, excitement, nausea, and weak, rapid pulse) when they do occur have therapeutic significance. However, the parasympathetic antispasmodic is often effective in relieving smooth muscle spasm of the bowel and is quite widely used.

Sympathetic Stimulant.—Adrenalin and ephedrin are the classic pharmacologic representatives of the antispasmodic drugs which act by stimulating the sympathetic innervation of the musculature. They are not particularly well adapted for use as relaxants of smooth muscle spasm of the bowel because of their pronounced tendency to elevate the blood pressure and cause cardiac palpitation and excessive myocardial stimulation. Pharmaceutical chemical research has developed several effective synthetic antispasmodic drugs which are sympathomimetic in action and do not cause excessive vasoconstriction. These drugs include syntropan, pavarine, and traseratin.

Direct Depressant.—Papaverine is the representative of the drugs which relax smooth muscle spasm by directly depressing the fibers of the spastic muscles.

Neutropic-Musculotropic Depressant.—Octin, methylisooctenylamine, is this type of antispasmodic. When given intramuscularly or orally, it depresses smooth muscle both by stimulating the sympathetic innervation and by directly depressing the muscle fibers. This would seem to be one of the preferred antispasmodic drugs, because of its dual antispasmodic action and because of its lack of atropine-like side effects. Another preparation of this type is spasalgin, a combination of papaverine, pantopon (an opium), and atropine (parasympathetic depressant).

Sedative-Antispasmodic Drugs.—Both sympathetic and parasympathetic antispasmodic drugs are often, and logically, combined with a sedative. Such a combination is especially useful in cases of spasm of the bowel, where nervousness is so often either a precipitating factor or tends to perpetuate the spastic state. Included among these drugs are: barbiton (belladonna alkaloids and phenobarbital), metropine (methyl atropine nitrate, both plain and with phenobarbital), homabital (methyl atropine nitrate and phenobarbital), valoctin (octin plus bromural, which, in contrast with other sedatives, is unique in that it is not a barbiturate), and bellergal (belladonna alkaloids, ergotamine and phenobarbital), as well as pavarine with phenobarbital and traseratin with phenobarbital.

ANTI-DIARRHEIC DRUGS

Absorbents.—Kaolin and other absorbents increase fecal consistency. However, they are not too well recommended when there is a bowel in-

fection, because they absorb any antibiotic given to combat the local infection and thus largely nullify its effect.

Protectives.—These substances, usually salts of bismuth, act by coating the intestinal mucosa, thereby increasing the bowel's tolerance of an irritant.

Astringents.—One of the most effective and widely used intestinal astringents is tannalbin, a tannin proteinate compound. Khuen¹ emphasized that: "The astringents combine various qualities which make them of value in intestinal therapy. They serve to precipitate albuminoids. Thus they increase the consistency of the intestinal content. This action protects the mucous membrane against chemical, bacterial, and mechanical irritants, and, at the same time, inhibits the secretions, thus diminishing transudation. By similarly inhibiting intestinal bacteria and their toxins, the astringents exert a specific antiputrefactive and antiseptic action. Finally, by tending to cause capillary constriction and dryness of the surface of the mucosa, they diminish sensitiveness to both direct and reflex stimuli."

Antibiotics.—When spasm of the bowel and diarrhea are the product of enteritis of bacterial or viral origin, an intestinal antiseptic should be given. The veterinarian has a rather wide choice of such drugs, including sulfathaladine, sulfaquinolone, sulfaguanadine, aureomycin, chloromycetin, and bacitracin.

SUPPORTIVE MEASURES

Parenteral Fluid.—When diarrhea is severe and can not be controlled within a reasonably short time, measures must be taken to overcome dehydration and maintain the animal in a nourished state. The parenteral fluid usually is normal saline solution, to which glucose or amino acids, or both, is added.

Blood Plasma or Whole Blood.—Decreased blood volume should be corrected by the administration of blood plasma, or of whole blood if reduced volume is due to hemorrhage.

Stimulant Drug.—Respiratory-circulatory weakness threatens or actually occurs in severe, prolonged cases. This is best dealt with by giving metrazol orally, or intravenously in emergencies. If a parenteral solution is given, the dose of metrazol can be injected into the lumen of the rubber tubing carrying the solution to the vein.

CASE HISTORIES

The following case histories illustrate the "sick" colon as encountered in small animal practice and the practical application of the therapy as outlined.

Case 1.—A Toy Fox Terrier, 4 months old, was suffering from idiopathic spastic, "ropy" colon and severe colic. One octin tablet every six hours for three doses re-

laxed the spasm and completely relieved the pain.

Case 2.—A Toy Fox Terrier, 6 months old, had a severe diarrhea and colic due to local irritation resulting from misfeeding. The offending food was undoubtedly shrimp. One-half an octin tablet was given in the afternoon. Defecation of semisolid feces occurred twelve hours after the first dose of octin. Ten days later, this patient was again brought in suffering from another similar attack. One octin tablet was given and the diarrhea was checked in twelve hours.

Case 3.—A litter of 7 Cocker Spaniel puppies, 7 weeks old, had severe diarrhea which was not controlled by four days of bismuth and paregoric medication. On the fifth day, bismuth and paregoric were discontinued. Then these puppies were given one octin tablet and one tannalbin tablet four times daily and $7\frac{1}{2}$ gr. of sulfaguandine twice daily. Colic was relieved within twenty minutes, and the diarrheic condition was cleared up inside of twenty-four hours.

Case 4.—In a litter of 5 Boxers, 8 weeks old, diarrhea had persisted for four days. Fecal examination established the diagnosis of hookworms. Bismuth was given for two days and failed to check the diarrhea. These patients were then put on one-half octin tablet t.i.d. and one tannalbin tablet t.i.d. Their cordlike spastic colons were quickly relaxed and their whining from colicky pain soon ceased after the octin was started, and within two days their bowel movements were normal.

Case 5.—A Springer Spaniel, 5 months old, had had anorexia and diarrhea for several days. At approximately fifteen-minute intervals, its colon would become spastic, and the animal would whine with pain. An intramuscular injection of 1 cc. of octin quickly controlled both spasm and pain. The injection was followed in three hours by one octin tablet and two tannalbin tablets. Three hours later, the same doses of these drugs were repeated. An enema was given. The patient was pain-free after the first dose of octin, and the next day the stool was normal.

Case 6.—A 5-year-old Saint Bernard was brought in for treatment because of its vigorous but unsuccessful attempts to defecate. Upon palpation, the colon was found to be in a markedly spastic state, and this

was borne out by the animal's unmistakable manifestations of severe abdominal pain. The spastic colon was quickly relaxed by intramuscular injection of 2 cc. of octin. As soon as the patient was comfortable, an enema was given. The end result of the enema was the expulsion of sausage casing. Recovery was uneventful.

SUMMARY

Hypertonicity or spasm of the smooth muscle of the colon and resultant diarrhea or spastic constipation are often due to reflex stimulation of the large bowel by mechanical, chemical, bacterial, or viral irritation of the colon wall. Such irritation initiates reflex stimulation of the colon's parasympathetic innervation, which causes hypertonicity or spasm of the muscles of the bowel wall and relaxation of the sphincters. This, in turn, results in the "fast," "wet" colon of diarrhea or the "locked," "dry" colon of spastic constipation. Parasympathetic hyperactivity of the "sick" colon is overcome by effecting stimulation of its sympathetic nerve supply, or depression of its parasympathetic innervation, by direct depressant influences. In cases of bowel spasm and diarrhea, these measures act to relax the spastically contracted radial muscles and relieve colicky pain, as well as to quiet the longitudinal muscles of peristalsis and tighten the sphincters, thereby slowing the bowel and increasing colonic dehydration and solidification of the feces. Or, if spasm has locked the bowel and spastic constipation exists, correction of parasympathetic overdominance relaxes the spasm and permits resumption of peristaltic activity.

Therapy for the spastic colon and associated diarrhea or spastic constipation consists of: (1) an antispasmodic drug, preferably one which acts both neurotropically and musculotropically, such as octin and valoctin; (2) an antidiarrhea drug with astringent action, such as tannalbin; (3) an antibiotic, when there is bacterial or viral enteritis; and (4) supportive measures, such as parenteral fluids, blood plasma or whole blood, and, in severely acute or intractable cases, a circulatory-respiratory stimulant to guard against or overcome collapse.

References

- ¹Best, Charles H., and Taylor, Norman B.: The

(Continued on p. 209)

A Comparison of the Ring and Capillary Tube Tests for Bovine Brucellosis in a County-Wide Area Test

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THE ABORTUS Bang Ring (ABR) or milk ring test has been widely applied in bovine brucellosis eradication programs in Europe. Roepke and co-workers¹ have reported that the test has proved to be 75 per cent efficient in locating reactor herds in Minnesota. An agreement of 96.2 per cent between the milk ring and blood serum-agglutination tests was reported from a survey of 8,469 herds, in which 4.5 per cent of the herds were infected.²

King³ has described a simple agglutination test using capillary glass tubes with which whole, skim, and homogenized milk may be tested for the presence of *Brucella* agglutinins. He reported an agreement of 92.7 per cent between the capillary tube method and the blood serum-agglutination test on 428 samples from individual animals. On the other hand, this laboratory found that over 50 per cent of the milk samples from cows with blood titers of complete at 1:50 to incomplete at 1:100 gave negative ring and capillary tube test reactions.⁴

The capillary tube test, ABR, and blood

serum-agglutination test have not been compared in a county area test. Since such conditions represent those which ultimately determine the value of diagnostic field procedures, it was deemed advisable to make such a comparison.

MATERIALS AND METHODS

A large dairy county in Wisconsin was chosen for the comparative survey since it represented a typical dairy area of the state. A total of 977 dairy cattle herds were tested by the ABR, capillary tube test, and the rapid or plate blood serum-agglutination test methods. Only cream samples were available for the ring and capillary tests from 142 herds.

The blood serum-agglutination test was used as the standard of evaluation for the two milk tests. Only the cows in milk production were considered. If a reactor animal was not in production, the herd was not included in the survey. The ABR, as described by Roepke,¹ and capillary tube test as devised by King³ were employed.

Two lots of ABR-type antigen provided by the United States Department of Agriculture, Bureau of Animal Industry, were used (No. 3-1736 and No. 3-1741). The former antigen was suspended in an aqueous solution of 50 per cent glycerin, while for the latter, 0.85 per cent saline was the suspending.

Antigen 3-1736 was used for all ring tests and for 572 of the milk capillary tube tests. Antigen 3-1741 was employed for 263 herd milk capillary-tube tests. Antigen 3-1736 was used for testing all cream samples.

Blood samples from, and data on, the animals tested were collected by state or federal field veterinarians. The blood samples were tested by the personnel of the State Disease Control Laboratory.

Milk and cream samples were collected by the personnel of a mobile ABR field laboratory and tested under the supervision of a veterinarian. Blood samples and milk or cream samples from the same herd were taken within a thirty-day interval of each other.

RESULTS

1) *Agreement of Milk Tests and Blood Test.*—Milk tests of 835 herds in the county disclosed an over-all ABR blood serum-agglutination test agreement of 75.3 per cent, and a capillary tube test-blood test agreement of 72.1 per cent (see table 1).

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The authors thank Dr. H. J. O'Connell, chief, Division of Livestock Sanitation, Wisconsin State Department of Agriculture, and Dr. W. R. Winner, veterinarian in charge in Wisconsin, U. S. Department of Agriculture, Bureau of Animal Industry, and their staffs for the collection of blood samples and herd production data required for this study.

(Continued from p. 208)

Pharmacological Basis of Medical Practice. 2nd ed. The Williams and Wilkins Co., Baltimore, 1950.

³Goodman, Lewis, and Goodman, Alfred: The Pharmacological Basis of Therapeutics. The Macmillan Co., New York, 1941.

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These percentages were derived by considering the agreements of the respective milk tests with the blood test among the infected (a herd with 1 or more reactor cows), suspected (a herd with 1 or more suspicious-titer cows), and noninfected (a herd with no reactor or suspect-titer cows)

TABLE 1—Results of ABR and Capillary Tube Tests Conducted on the Milk from 835 Herds*

	ABR result	No. of herds	Corresponding capillary reactions	
			+ herds	Neg. herds
232 Infected herds	4+	129	125	4
	3+	48	43	5
	2+	8	5	3
	1+	4	0	4
	Neg.	43	7	36
Total:	+	189	Totals: 180	
Agreement with blood test: 81.5 per cent			77.6 per cent	
163 Suspected herds	4+	9	8	1
	3+	10	4	6
	2+	3	0	3
	1+	1	1	0
	Neg.	140	2	138
Total:	+	23	Totals: 15	148
Agreement with blood test: 14.1 per cent			9.2 per cent	
440 Non- infected herds	4+	4	4	0
	3+	9	5	4
	2+	5	1	4
	1+	5	1	4
	Neg.	417	22	395
Total	+	23	Totals: 33	407
Agreement with blood test: 94.8 per cent			92.5 per cent	
Over-all agreements with blood test:				
ABR: 75.3 per cent				
Capillary: 72.1 per cent				

*Herd status determined by the results of the "rapid" or plate blood serum-agglutination test.

herds. When the suspected herds were not included, the agreements with the blood test were 90.1 per cent for the ring test and 87.4 per cent for the capillary test.

Of the 232 herds considered as infected on the basis of a positive blood test, the ring test located 81.5 per cent of the reactor herds, while the capillary tube test detected 77.6 per cent. Of the 163 suspected herds tested, the ring-blood test agreement was 14.1 per cent, and the capillary tube test-blood test agreement was 9.2 per cent. In 440 noninfected herds, the respective agreements with the blood test were 94.8 and 92.5 per cent. The data are summarized in table 1.

Using antigen 3-1736 for both the ABR and capillary test, an agreement with the serum-agglutination test of 74.1 per cent and 72.2 per cent, respectively, was observed for 572 herd milk samples from blood test positive, suspected, and negative herds. When suspected herds were excluded, the agreements were 90.3 per cent for

the ABR and 88.7 per cent for the capillary tube test. The ring test was in agreement with the blood test in 81.3 per cent of 166 infected herds tested, in 12.6 per cent of 119 suspected herds, and 95.5 per cent of 287 clean herds. The capillary tube test-blood test agreement was as follows: 79.5 per cent among the infected herds, 9.2 per cent among the suspected herds, and 94.1 per cent for the clean herds.

The milk tests in 263 herds in which antigen 3-1736 was used for the ring test and in which antigen 3-1741 was used for the capillary tube test gave an ABR-blood test agreement of 77.9 per cent and a capillary test-blood test agreement of 71.9 per cent. If the suspected herds were not considered, the agreements were 89.9 and 84.5 per cent, respectively. For 66 infected herds tested, the ABR had an agreement of 81.8 per cent with the blood test for the infected herds, while the capillary test's accuracy was 72.7 per cent. In the 44 suspected herds, the agreement was 18.2 per cent for the ABR and 9.1 per cent for the capillary test. The ABR and blood test agreed in 93.5 per cent of the 153 noninfected herds tested, while the capillary test had an 89.5 per cent agreement.

2) *Agreement of Cream Tests and Blood Test.*—The results obtained using the ABR and capillary tube test with 142 herd cream samples agreed with the blood test findings in 71.8 and 69.7 per cent, respectively. When the suspected herds were not considered, the ABR agreement with the blood test was 86.2 per cent, and with capillary tube test the agreement was 81.9 per cent.

Agreements on tests of cream from 41 reactor herds were 65.9 per cent for the ABR and 58.5 per cent for the capillary test. Twenty-six suspected herds gave 7.7 per cent agreement with the ABR and 15.4 per cent with the capillary method.

The respective agreements for the 75 clean herds tested were 97.3 and 94.7 per cent. The data are given in table 2.

3) *Disagreements Due to False Negative and False Positive Reactions.*—Errors of 21.9 per cent for ABR milk tests and 26.8 per cent for the cream ABR may be attributed to false negative reactions, i.e., a positive blood test and negative ABR, were observed. These percentages were derived on the basis of the total number of milk or cream tests conducted. However, if only the suspected and infected herds were con-

sidered, the ABR false negative results for milk tests were obtained in 46.3 per cent of the herd samples, whereas 56.7 per cent false negatives were recorded for the cream tests. On the basis of the total number of herds tested, the capillary test with milk gave false negative reactions in 23.9 per cent of the herd samples and with cream 27.5 per cent. When only the infected and suspected herds were considered, the false negative results with the capillary tube test were 50.6 per cent for milk samples and 58.2 per cent for cream samples.

The ABR false positive reactions, i.e., negative blood test and positive milk test, were found to occur in 2.8 per cent of 835 herds tested and in 5.2 per cent of the 440 negative herds tested. On the basis of examinations of 142 herds by the cream ABR, 1.4 per cent false positive reactions were disclosed, while 2.7 per cent were found among the 75 noninfected herds. The capillary tube test gave 3.9 per cent false positive results with 835 milk samples, and 7.5 per cent when only the 440 negative herds were considered. With the capillary tube cream test of 142 herds, 2.8 per cent false positive reactions were found; and when only the 75 negative herds were considered, 5.3 per cent was observed.

DISCUSSION

The reliability of the ring and capillary tube tests in locating infected herds may be considered acceptable for county and area testing if conducted at consecutive intervals of six months or less. Unfortunately, the majority of suspected herds in these trials was missed by both tests. The ultimate status of the suspected herds, of course, is unknown. A sizable percentage of the suspected blood reactions may have been due to strain 19 vaccination. Since a suspected blood titer for a single animal has determined the status of an entire herd, and such titers are known to fluctuate from test to test, a number of the herds probably would have been found to be negative on a subsequent test.

Apparently both the glycerin and the saline type antigens for the capillary tube tests yielded similar results.

The agreements between the ABR and capillary tube tests with cream samples were approximately 3 per cent lower than the over-all agreements obtained with the

milk samples. The age of the samples may have been responsible for this difference, as souring or proteolysis is known to affect the tests.

Difficulty was experienced in reading the capillary tests. Careful sustained scrutiny

TABLE 2—Results of ABR and Capillary Tube Tests Conducted on the Cream from 142 Herds*

	ABR result	No. of herds	Corresponding capillary reactions	
			+ herds	Neg. herds
41 Infected herds	4+	8	8	0
	3+	12	9	3
	2+	6	5	1
	1+	1	1	0
	Neg.	14	1	13
Total:	+	27	24	17
Agreement with blood test:			65.9 per cent	58.5 per cent
26 Suspected herds	4+	1	1	0
	3+	0	0	0
	2+	1	1	0
	1+	0	0	0
	Neg.	24	2	22
Total:	+	2	4	22
Agreement with blood test:			77.7 per cent	15.4 per cent
75 Non-infected herds	4+	1	1	0
	3+	0	0	0
	2+	0	0	0
	1+	1	0	1
	Neg.	73	3	70
Total:	+	2	4	71
Agreement with blood test:			77.7 per cent	94.7 per cent
Over-all agreements with blood test:				
ABR:			71.8 per cent	
Capillary:			69.7 per cent	

*Herd status determined by the results of the "rapid" or plate blood serum-agglutination test.

was often required to detect weakly positive reactions. Many samples, however, which gave 3+ and 4+ ring test reactions were negative to the capillary test. Agglutination of the antigen either did not occur or it was not detected. Probably the latter assumption is correct.

In general, the ring test appeared to be more accurate than the capillary tube test, since a closer agreement was observed with the blood test. The percentage of false negative and false positive reactions was lower for the ring test. Within the group of false negative reactions, the milk tests give an erroneous sense of security to both the dairyman and the disease control official.

SUMMARY

A comparison of the results of the ABR and capillary tube milk and cream tests for bovine brucellosis has been made in a large dairy county in Wisconsin. The plate blood serum-agglutination test for brucellosis was used as the standard of evaluation. The

milk ABR-blood serum-agglutination tests agreed in 74.1 to 77.9 per cent of the cases, while the corresponding capillary tube test-blood test results agreed in 71.9 to 72.2 per cent. The cream ABR-blood test agreement was 71.8 per cent. The cream capillary tube test-blood test agreement was 69.7 per cent. A lower percentage of false negative and false positive reactions was observed with the ring test than with the capillary tube test. Therefore, the ABR or ring test proved to be slightly more accurate than the capillary tube test. Certain refinements in the capillary test may reduce the percentage of error.

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Effect of DDT-Dusted Alfalfa Hay

A 44-acre field of alfalfa hay was laid off in 16, 1-acre plots with intervening buffer strips. The 16 plots were divided into four blocks of four plots each. DDT was applied to the plots at the following levels per acre: (1) none; (2) 1 lb; (3) 2 lb; (4) 4 lb. Another lot of alfalfa hay was procured to feed to lambs along with DDT capsules at the following amounts in parts per million of hay: 0, 50, 100, and 200. Thirty-two Rambouillet and 32 Rambouillet X Columbia lambs were segregated according to breed and weight and allotted to the eight treatments at random.

There were no apparent differences among the alfalfa hays in content of protein, ash, crude fiber, N-free extract, P, or Ca. There were no apparent differences among the alfalfa hays in the digestibility of protein, ether extract, crude fiber, and N-free extract or in the amount of total digestible nutrients. The DDT-dusted alfalfa hays had an increased metabolizable

energy content when compared to the non-dusted alfalfa hay. There was an increase in N balance as the amount of DDT residue decreased on the alfalfa hay. There were no apparent differences among the DDT-treated field hays or the laboratory hays in rate of gain, total gain, and feed consumption of the lambs. The average amount of DDT present in the mesenteric and kidney fat was 1.9, 15.8, 18.2 and 44.2 p.p.m. in the lambs consuming alfalfa hay dusted with 0, 1, 2, and 4 lb. of active DDT per acre, respectively. The average amount present in the mesenteric and kidney fat of lambs receiving DDT in capsules was 0.0, 19.6, 32.1, and 73.4 p.p.m. when 0.0, 50.0, 100.0, and 200.0 p.p.m. of DDT, respectively, were fed. The average amount of DDT in muscle, liver, kidney, and brain varied from 0.0 to 1.7 p.p.m.—*J. Anim. Sci., March, 1951, abstr. in Biol. Abstr., Jan., 1952.*

Charts Illustrating Important Parasites and Parasite Ova of Large and Small Animals

H. C. Eschenroeder, B.Sc., and C. R. Plegge, B.Sc., of the University of Missouri, have produced a set of two charts illustrating a few of the more important parasites and parasite ova of domestic animals, which are intended to help students and practitioners of veterinary medicine in the study and diagnosis of common parasitic conditions. The set consists of two charts, 11 in. by 17 in., one being drawings of common parasites found in large animals, and the other of common parasites and ova found in small animals.

The charts sell for \$2 per set and may be obtained by writing to Veterinary Illustrations, P. O. Box 153, Columbia, Mo.

A practical method of making cortisone from a wild Mexican plant root instead of from ox bile was developed.—*Am. Pharm. A., Dec., 1951.*

Hard pad disease, even after the appearance of nervous derangement, may respond well to either hard pad antiserum or to a full dose of live distemper virus. The latter can only be used with safety on dogs that have been immunized against distemper or have recovered from a natural attack.—*Irish Vet. J., Oct., 1951.*

NUTRITION

Experimental Avitaminosis A in Young Pigs

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DURING A SERIES of nutrition experiments, a wealth of data on avitaminosis A in young growing pigs was obtained. Most of these data are based on biochemical studies. Previous reports on avitaminosis A in young pigs have dealt primarily with histopathological studies,^{10,12} gross symptoms^{2,4,6,7,9,13} and liver storage of vitamin A.^{2,4,7,9} Recent investigations with other species of animals have shown that the blood content of vitamin A is a sensitive indicator of the state of vitamin A nutrition.^{1,6,11,15}

The object of this paper is to report the results of clinical studies on avitaminosis A in young pigs with emphasis on the relationship of blood plasma levels of vitamin A content, cerebrospinal fluid pressures, night blindness, and weight gains.

EXPERIMENTAL

Five experiments were conducted over a two-year period to determine the carotene requirements of swine. A total of 74 pigs were used in these experiments. In each trial, the procedure has been to select entire litters of grade Hampshire pigs varying in age from 2 to 4 weeks and place them on a low-carotene depletion ration. This ration was composed of hulled oats (groats) 79, meat scraps 10, dried skim milk 10, APF* 1 per cent, and irradiated yeast 0.2 oz. Fresh fluid skim milk was fed instead of dried skim milk for the first few weeks. All pigs were kept in raised, wire-floored cages with access to water and feed *ad libitum*.

Weights were recorded weekly, blood plasma vitamin A values were determined weekly or every two weeks by the method of Kimble,¹¹ liver vitamin A content was determined by the method of Davies,⁹ cerebrospinal fluid pressures were measured by a method reported by Sorensen *et al.*,¹¹ and night blindness studies were conducted as reported by Guilbert *et al.*⁹

From the Department of Animal Husbandry (Hentges, Grummer, Bohstedt), the Department of Biochemistry (Phillips), and the Department of Veterinary Science (Sorensen), University of Wisconsin, Madison.

*Lederle APF feeding supplement-5.

RESULTS AND DISCUSSION

On the basis of 185 observations on 91 pigs at the University of Wisconsin over a five-year period, the average level of blood plasma vitamin A of apparently normal young pigs ranging in age from 3 weeks to 4 months was calculated to be 23.2 γ /100 ml. There was a range of values from 15.3 to 31.4 γ /100 ml. In the present experiments, the first indication of a developing vitamin A deficiency was a decrease of blood plasma vitamin A levels, i.e., to values below 15 γ /100 ml. Six to eight weeks of restriction to the depletion ration, at which point the blood plasma vitamin A values were below 5 γ /100 ml., was required before visible symptoms were observed.

One of the first visible manifestations of the deficiency was a tendency to carry the head tilted to one side. An infection in the inner ear (otitis media) was found in each of these cases.

Incoördination of movement, as exhibited by a swaying gait, and paresis of the hind legs was invariably observed. As the deficiency became more severe, control of the hind legs was gradually lost (fig. 1) and the animal was able to move only by use of the forelegs. This partial paralysis, as reported by Hughes *et al.*,¹³ may be caused by nerve degeneration in portions of the spinal cord, and in the sciatic and femoral nerves. An extreme weakness of the back (lordosis), as shown in figure 2, was frequently observed. In the later stages of the deficiency, the pigs would often go into severe tonic spasms which lasted from two to three minutes. These attacks occurred irregularly but often could be induced by excitement. Figure 3 shows a pig in the initial stage of a spasm.

A seborrhea characterized by a brown, greasy exudate was found over the entire body surface but was noticed first in the

flanks, at the base of the ears, and around the eyes. From observations made during postmortem examinations, it appeared that several deaths of deficient pigs were due to



Fig. 1—Vitamin A deficient pig exhibiting partial paralysis and seborrhea.



Fig. 2—Vitamin A deficient pig showing lordosis and weakness of hind legs.

pneumonia. Foot *et al.*⁷ also reported deaths due to pneumonia among vitamin A deficient pigs.

The relationship of blood plasma levels of vitamin A to liver storage of vitamin A is demonstrated in figure 4. From these data, it appears that the vitamin A content of the plasma remains within the normal range until the liver reserves of vitamin A are almost depleted. There is not a direct relationship of blood plasma vitamin A values with liver vitamin A reserves while the plasma values are in the normal range. As explained by Glover *et al.*,⁸ the levels of blood plasma vitamin A, which is primarily vitamin A alcohol, are proportional to the concentrations of vitamin A alcohol in the liver but are not proportional to the total liver stores of vitamin A, which consist mainly of vitamin A esters.

A rise in cerebrospinal fluid pressure was observed when the blood plasma vitamin A

levels had dropped to approximately 7 γ /100 ml. plasma. At this point, gross symptoms were not evident; hence, the blood plasma vitamin A analysis affords a safe, simple method of detecting the early invisible

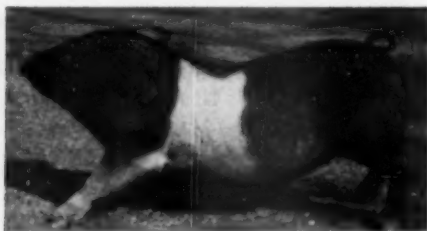


Fig. 3—Vitamin A deficient pig in initial stage of a spasm.

damage to the central nervous system without performing a cerebrospinal fluid pressure determination. Table 1 shows the relationship of cerebrospinal fluid pressures to plasma vitamin A levels at three stages of an experiment in which four lots of weaning pigs were depleted of their vitamin A reserves, then fed carotene at three levels of supplementation. Increased cerebrospinal fluid pressures were associated with low plasma vitamin A levels at the end of the depletion period. Supplementation with carotene prevented a further rise in cerebrospinal fluid pressures and gradual decreases were apparent in the lots receiving 25 and 40 γ carotene per kilogram of body weight daily.

Night blindness was observed only after the plasma levels of vitamin A had remained below 5 γ /100 ml. for several days. This observation is in agreement with a report by Lewis *et al.*¹³ that the ability of the eye to adapt to darkness is not affected early in the course of vitamin A deficiency. They reported maximal concentrations of vitamin A in the retinas of rats despite low concentrations of plasma vitamin A and the absence of vitamin A in the liver. Popper,¹⁶ by means of fluorescence microscopy, observed that during periods of depletion the retina contained vitamin A long after other tissues had been depleted. Postmortem examination of the severely deficient pigs revealed a constriction and degeneration of the optic nerves where they pass through the optic foramina. These observations support the suggestion by Wolbach and

Bessey¹⁸ that retardation of skeletal growth occurred, whereas the nervous system continued at its normal rate of development and thus accounted for degeneration of the nervous system during a vitamin A deficiency.

TABLE 1—Relationship of Cerebrospinal Fluid Pressures to Plasma Vitamin A Levels of Pigs During Depletion and Subsequent Supplementation

Amount carotene fed (γ /kg. body wt.)	Average cerebrospinal fluid pressure ¹		
	Start of experiment (mm.)	Start of supplementation (7th wk.) (mm.)	End of experiment (18th wk.) (mm.)
None	100 (22)	154 (<5.0)	218 (<5.0)
10 γ	118 (28)	154 (<5.0)	162 (11.0)
25 γ	121 (25)	173 (<5.0)	142 (14.0)
43 γ	88 (28)	150 (<5.0)	124 (19.0)

¹Corresponding plasma levels of vitamin A in γ /100 ml. are in parentheses.

An effect of the vitamin A deficiency on appetite or rate of gain was not detected until eventual paralysis and weakness prohibited movement to the feeder. Pigs with complete paralysis of the hind legs and others which often went into spasms were able to maintain a good rate of gain as long

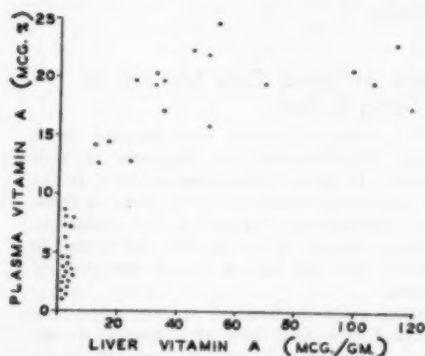


Fig. 4—Relationship of plasma and liver concentrations of vitamin A in pigs.

as they were afforded access to feed and water. This observation is in agreement with similar observations by Elder,⁵ Guilbert *et al.*,⁹ and Hughes *et al.*¹³

SUMMARY

The results of clinical studies on avitaminosis A in young growing pigs are reported.

The average blood plasma level of vitamin A in 91 apparently normal young pigs was 23.2 γ /100 ml. of plasma.

A direct relationship of low blood plasma vitamin A levels with depleted liver reserves of vitamin A was observed. A definite relationship did not exist between plasma and liver levels of vitamin A when the plasma levels were within the normal range.

Increased cerebrospinal fluid pressures were associated with low blood plasma levels of vitamin A.

Night blindness occurred only when all measurable vitamin A reserves were exhausted.

No direct effect of the vitamin A deficiency upon appetite or rate of gain was observed.

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Intravenous Iron

A Middlewest medical school has been using saccharated iron oxide, a colloidal suspension of ferric chloride and sucrose, intravenously in human beings and found it safe and relatively nontoxic. Even when inadvertently injected subcutaneously, it has produced only a local discomfort for fifteen to thirty minutes. Hematological response has been good, the iron being directly utilized by the bone marrow and the excess depleting stores in the liver and spleen. Orally administered, iron gives uncertain results because of variances in individual tolerance and absorption. The solution contains 20 mg. of iron per cubic centimeter and is given in three daily doses of 5 cc., 10 cc., and 10 cc.—*Blood Horse*, Nov., 1951: 86.

Urea in Dairy Rations

In several studies, young dairy animals have made good growth when urea was added to a low protein ration, whereas on this basal ration without urea they failed to grow. In a Wisconsin study with Holstein-Friesian cows, the differences in production on basal plus linseed meal and basal plus urea were not statistically significant. Extensive studies on the composition of the milk showed no significant differences. When ample true protein is present the bacteria will use it for growth in

preference to urea. Only 4 or 5 per cent of protein equivalent should be used with feed mixtures containing 11 to 13 per cent for milking rations. Urea is acted upon by the enzyme "urease" to liberate free ammonia. While there appears to be no real danger to the health of the animals, the loss of added urea N and possible unpalatability preclude the use of these two ingredients in the same mixture.—*Feedstuffs* 23, 1951: 32, abstr. in *Biol. Abstr.*, Jan., 1952.

Value of Corn-Gluten Feed.—Corn-gluten feed, one of the most common high protein feeds for dairy cattle, gives excellent results when properly fed in concentrate mixtures. Like that of corn, the protein of corn-gluten feed is unbalanced. However, it may be used satisfactorily as the chief protein supplement for dairy cattle if the hay contains 25 per cent or more of legumes. For swine or poultry, it should be mixed with ingredients which furnish proteins of high quality, such as soybean oil meal, fish meal, or meat scraps. For best results, in general, corn-gluten feed should be used in mixtures.

Effect of Dried Cow Manure on Growing Pullets

The value of dried cow manure as a source of vitamins for chickens is well known. Despite widespread interest in its use as a supplementary feed, there is meager information regarding its value in grower rations with specific reference to growth rate and age at sexual maturity of pullets.

Sixty New Hampshire pullets were randomized into four lots at 7 weeks of age. They were fed rations containing 0, 5, 10, and 15 per cent oven-dried cow manure.

The data suggest that there is insufficient gonadotropic hormone in rations containing 5 and 10 per cent oven-dried cow manure to retard growing pullets with respect to growth rate, age at sexual maturity, and subsequent egg production to 25 weeks of age. When 15 per cent oven-dried cow manure was fed, however, growth rate was slower, sexual maturity retarded, and intensity of ovulation reduced.—*World's Poult. Sci. J.*, 7, 1951.

EDITORIAL

Andrew Leslie MacNabb - 1897-1952

One of the great sorrows of the hour for the veterinary profession is the untimely death of Principal MacNabb of the Ontario Veterinary College on Feb. 16, 1952, for in that misfortune the career of a man with a fine mind was terminated at a time of mounting achievement. Setting aside, momentarily, the mourning of his family, veterinary medicine also mourns the loss of a substantial figure of calm dignity in the ranks of education and general leadership, which was felt far beyond the bournes of his native country. His contributions to veterinary medical education formally started in 1945, when he succeeded the late Dr. C. D. McGilvray as principal (retired) and forthwith began to improve, physically and academically, the old school on a scale that made it one of the foremost veterinary colleges of the world. Though his career in this connection was too short for the writing of a lengthy biography, the monument he erected in the educational field and the influence he wielded in the counsels of the profession were outstanding.

From the date of his graduation at the Ontario Veterinary College in 1923, to the time of his appointment as principal of his alma mater, Dr. MacNabb brought important credits to veterinary medicine through his work in the research and executive branches of the Ontario Department of Health. During these years, he was better known, perhaps, in the medical than in veterinary circles. But when chosen to head America's oldest college of veterinary medicine, he was soon recognized as a competent leader.

Dr. MacNabb was born at Beachburg, Ont., Dec. 18, 1897. Following early education at Powassan, Kenmore, and Ottawa, he entered the Ontario Veterinary College and received his degree there in 1923. In 1924, he was appointed bacteriologist in the Ontario Department of Health and was made director of its provincial division of laboratories in 1928.

During World War I, he served in France

with the Canadian Army for three years as a stretcher bearer with the 11th Field Ambulance and was wounded at Passchendaele. During World War II, he was requested to undertake special laboratory



Dr. Andrew L. MacNabb

work for the Dominion Government and later was named laboratory consultant of the Canadian Army with the rank of lieutenant colonel.

Dr. MacNabb was a fellow of the Toronto Academy of Medicine and of the American Public Health Association; he obtained the degree of doctor of veterinary science from the University of Toronto in 1945. He was a member of the American Society of Immunologists, the Ontario Veterinary Association and, since 1947, a member of the Executive Board of the AVMA for District I (Canada). He was a member of the board of directors of the Canadian V.M.A., and a charter member of the American Board of Veterinary Public Health.

In 1948, Dr. MacNabb was chosen veterinarian of the year by the Ontario Veterinary Association and, in 1949, an honorary associate of the Royal College of Veterinary Surgeons in Great Britain.

He is survived by his wife, the former Florence Clarke; one daughter, Margaret; two sisters, Mrs. C. M. Scott, of Peterborough, and Mrs. W. B. Faith, of Ottawa. Funeral services were held in War Memorial Hall on the College campus on February 19.

Atrophic Rhinitis of Swine

Currently, much interest is being generated in infectious atrophic rhinitis in swine and it is sometimes mistakenly labeled as a new disease. A similar, if not identical, disease was described in Denmark by Jensen in 1916. In 1944, Doyle (*J.A.V.M.A.*, Sept., 1944: 132) reported that it had been seen in one Indiana community since the early 1920's. It has also been observed, but not reported, in Iowa as early as 1932. However, until recent years it was too often not differentiated from so-called "bull nose" in swine. Prior to about 1940, differentiation was of little consequence as neither disease was very troublesome; both were transmissible but not highly contagious and both responded little, if any, to treatment.

While we have no statistics to prove it, the incidence of "bull nose" seemed to decline, over the years, as more sanitary methods of raising swine were gradually adopted, only to again increase notably in recent years. Being due, supposedly, to the *Actinomyces necrophorus* organism, as are so-called foot rot and calf diphtheria in cattle, it was only natural that when the sulfonamides, especially sodium sulfapyridine, were successful as a treatment for the latter that they also should be tried in treating "bull nose." Results were quite satisfactory, so with it responding to treatment and cases of atrophic rhinitis not responding to treatment, differentiating these diseases has assumed importance.

Furthermore, while "bull nose" has remained, in most areas, a relatively minor disease of swine, atrophic rhinitis has become one of the major scourges of the swine industry both in Canada and the United States. While very definite quarantine policies were adopted early by Canadian authorities, to control the disease, authorities south of the border have seemed indifferent.

Our swine industry now is being seri-

ously handicapped by this insidious disease which is so often spread by carriers that show no symptoms. Many a breeder of boars or brood gilts is now confronted with the problem of either hiding his visibly affected animals, while he sells the unsuspecting buyers animals which could transmit the disease, or having the boars castrated and the entire herd marketed, often at a considerable economic loss. His only guide is his conscience and the advice, if he seeks it, of his veterinarian. Many a conscience will condone anything so long as the bearer is not caught, and, unfortunately many avenues for such sales are available. For instance, sale barns at various distances, where the seller is unknown and where supervision, if any, is superficial, seem almost to welcome such business.

Fortunately, not many breeders will purchase boars or even gilts in this manner, but enough do to continue the spread of the disease. Has any effective official attempt been made to date to discourage such traffic or to control this disease? If so, such attempts have not been widely publicized. Should not a study of the success our Canadian neighbors have had in eliminating infectious atrophic rhinitis in swine be made, followed by a vigorous effort at its control in the United States?

Foot-and-Mouth Disease in Europe

Thousands of outbreaks of foot-and-mouth disease have been reported in Europe during recent months. Great Britain is continuing the "stamping out" (slaughter) policy yet has had about 70 outbreaks recently. This raises some questions: Is the disease always present in some European countries or is it imported in a form too mild to recognize at first, but increasing in virulence as it spreads? Or does vaccination merely mask the symptoms and actually create carriers? Three types of antigenic virus are recognized but at least six variants have been reported. Are the variants responsible for failures in control efforts?

The disease is of international concern. So long as it persists in one country other countries are in danger. International collaboration in its study from all possible angles is urged.—An Editorial, *Brit. Vet. J.*, Dec., 1951: 473.

CURRENT LITERATURE

ABSTRACTS

Salmonellosis in Queensland

Outbreaks of salmonellosis involving chickens, ducks, pigs, sheep, dogs, cattle, horses, and guinea pigs are recorded. Fifteen species of *Salmonella* were isolated. Three outbreaks involving sheep, four in horses, and two involving dogs are described.—[G. C. Simmons: *Salmonellosis in Domestic Animals and Birds in Queensland*. *Austral. Vet. J.*, 27, (1951): 296-301.]

Tuberculin in Human and Veterinary Medicine

A plea is put forward for abolition of the use of "old tuberculin" by the medical profession and substitution of "purified protein derivative." In veterinary practice, such substitution is making rapid headway.

Purified protein derivative (P.P.D.) of constant characters, containing about 90 per cent of true tuberculo-protein in the dry state, is easily prepared by the very simple Weybridge technique.

Solutions can be accurately standardized by chemical analysis and the wide variations inherent in ordinary biological standardization can thus be avoided. Because of the high losses of active principle during heat concentration of mediums in which *Mycobacterium tuberculosis* has been grown, "P.P.D. tuberculin" is much cheaper to manufacture than "O.T."—[Anon.: *Discussion on Tuberculin in Human and Veterinary Medicine*. *Proc. Royal Soc. Med.* 44, (1951): 1045-1054.]

Public Health Aspects of Atomic Disaster

No conceivable definition of public health can fail to include defense against atomic attack.

The atomic bomb produces no new and mysterious illness. Medical science has long been aware of the effects of total body radiation, of severe burns, of shock, of extensive wounds, and crushing injuries.

Training for dentists, veterinarians, medical students, and nurses will be aimed at adapting their skills to the new techniques they will be called upon to perform.

The specter of atomic attack is a grim one; the devastation of our major cities would be great. Our resources in men and material have been studied, standardized, and are being made available in practical fashion to our target areas. Attempts are well under way to secure acceptance of new ideas, new programs, and new activities on the part of each citizen.

Present evidence points toward our having the

menace of atomic attack with us for a long time. The solution to the problem of preparation for medical defense against the atomic bomb must therefore remain a top priority health program. Alert to changes in its scope, ever ready to re-evaluate our resources, critical of our progress, mindful of its effect upon the minds and activities of our citizens, New York State expects to meet this challenge with even greater energy and co-operative effort than has yet been applied to the solution of a major public health program.—[George James: *Public Health Aspects of Atomic Disaster*. *Yale J. Biol. and Med.*, 24, (1951): 116-122.]

Newcastle Disease in the Cave Bat

The cave bat, *Myotis lucifugus*, is susceptible to the California strain 11914 of Newcastle disease virus by intranasal instillation. The California strain was carried six passages in the bat by intranasal instillation of infected bat brain suspensions. Newcastle disease virus infection could not be produced in bats by intranasal instillation of the Minnesota 1946, BAI 1; Colorado 1946, BAI 1; Kentucky 1946, BAI 1; Connecticut 1946, BAI 1; and Delaware 1946, BAI 1 strains of the virus. Three trials using intranasal instillation were made for these five strains.—[Reginald L. Reagan and A. L. Brueckner: *Effects of Nasal Instillation of Virus Strains of Newcastle Disease Virus into the Cave Bat (Myotis Lucifugus)*. *Am. J. Vet. Res.*, 12, (Oct., 1951): 347-348.]

Newcastle Disease Virus in Tissues of Infected Chickens

A study of the concentration of Newcastle disease virus (NDV) in the tissues of chickens experimentally infected with a virulent field strain revealed the virus to be present in the blood, spleen, lung, trachea, and intestinal contents at twenty-four hours after inoculation and continued to be found in some of the tissues on the seventh day, after which no virus could be isolated. The virus was most concentrated in the lung and trachea where concentrations of 10^7 embryo lethal doses were found on the fourth day. A comparison of the virus concentration in the blood, spleen, and lung following inoculation of four different strains of NDV indicated that the less virulent the strain, the lower was the concentration of virus in the tissues. There were more apparent differences between the intranasal and subcutaneous routes of inoculation with the less virulent strains than with the virulent strain. There was usually a lower

concentration of virus in the tissues following subcutaneous inoculation of the less virulent strains. While antibody production was satisfactory following inoculation of the four strains studied, the virulent field strain produced the most consistently high antibody response. Following inoculation of the less virulent strains, the antibody response showed more variation and was frequently less than the response following inoculation of the more virulent strain. The infectivity neutralizing antibody and the hemagglutination-inhibition antibody were detected by the fifth to the seventh day in the experimental chickens.—[Melvin S. Hofstad: *A Quantitative Study of Newcastle Disease Virus in Tissues of Infected Chickens*. *Am. J. Vet. Res.*, 12, (Oct., 1951): 334-339.]

Susceptibility of Cattle to *Brucella Suis*

Two of 4 heifers vaccinated with *Brucella abortus* strain 19 at 6 months of age were exposed, following calving, to brucellosis by introducing a suspension of living *Brucella suis* into the teat canal. Both animals became infected as measured by blood serum-agglutination response and recovery of *Br. suis* from the milk during life and from the tissues at autopsy.—[F. V. Washko and L. M. Hutchings: *Susceptibility of Cattle to Brucella Suis Following Vaccination with Brucella Abortus Strain 19*. *Am. J. Vet. Res.*, 13, (Jan., 1952): 24-25.]

A Note on the Occurrence of Negri Bodies

The hippocampus major is generally regarded as the site of election for the Negri bodies and, from the earliest times, the demonstration of these bodies in the hippocampus has been the standard diagnostic test for rabies. During recent years, however, the classical conception of the hippocampus as the site of election for Negri bodies has been questioned.

In this investigation the brains of animals which died of natural, as well as experimental, rabies were studied.

1) *Natural Rabies*.—The material studied included the brains of 2 human beings who died, 97 dogs, and 1 donkey.

In natural rabies, the hippocampus major appeared to be the site of election for Negri bodies generally. In some cases, the cerebellum and the mid-brain were the sites of election. These findings suggest that an examination of all the three areas of the brain may reduce the number of inconclusive results.

2) *Experimental Rabies*.—The brains of 300 guinea pigs and 25 rabbits which died of experimental rabies were studied.

In experimental rabies, the mid-brain, at the level of the oculomotor nucleus, was markedly superior to the hippocampus and the cerebellum as the site of election for Negri bodies.

In some guinea pigs which died of infection

with the Paris strain of rabbit-fixed virus, Lyssa bodies and a few Negri bodies were demonstrable in the mid-brain. They were not found in the hippocampus or cerebellum.—[N. Veeraraghavan: *A Note on the Occurrence of Negri Bodies*. *Indian J. M. Res.*, 38, (1951): 261-265.]

Horses and Their Teeth

Deep jaws for long life could be a useful watchword in horse breeding. Having wondered if the only reason for the frequency of decayed or irregular teeth in horses could be dietetic, and having looked at the external signs of dental disorder long enough, the author came to the conclusion that diet is not the only cause. The next and obvious step was to have a look into the interior of the jaws by using x-rays, and the results were revealing.

If a prototype with small teeth is crossed with one possessing large teeth, there seems no certainty that the offspring will have teeth in proportion to the available depth of jaw for the implantation of the teeth.

A crossbred may have the small incisors of one parent and the large cheek teeth of the other.

If large teeth are crowded into a small jaw, two teeth may occupy one alveolus, with subsequent pathological changes.

Mongrels, i. e., the offspring of crossbred parents on both sides, are more likely to have dental irregularities.

A long jaw gives proper spacing for the cheek teeth, and a deep jaw provides implantation for long teeth.

Although the incisors become more nearly horizontal in old age, procumbency of the body of the mandible exaggerates this tendency: horses with a horizontal, straight ventral border of the mandible will lose their "cupped bite" sooner than those with a convex ventral border—important in conservation of pastures, because with a cupped bite the horse cuts more cleanly and does not tear out the grass by the roots.—[J. G. Speed: *Horses and Their Teeth*. *J. Royal Army Vet. Corps*, 22, (1951): 136-141.]

New Parasite Records from California Dogs

Within the past year, four species of parasites not previously reported from dogs in California have been identified in the parasitology laboratory of the School of Veterinary Medicine, University of California, Davis. These include two trematodes, *Apophallus donicus* (Skrjabin and Lindtroy, 1919) and *Alaria americana* Hall and Wigdor, 1918; a cestode, *Mesocostoides variabilis* Mueller, 1927; and a mite, *Pneumonyssus caninum* Chandler and Ruhe, 1940. *Mesocostoides variabilis* has also been recovered once from a cat.—[James R. Douglas: *New Parasite Records From California Dogs*. *Cornell Vet.*, 41, (1951): 342-346.]

DDT Resistance in Korean Body Lice

Contrary to expectation, routine application of 10 per cent DDT powder to a large group of Korean military personnel during the winter and spring of 1951 resulted only in an increase of infestation with the body louse (*Pediculus humanus corporis* Deg.).

DDT resistance in houseflies has been reported from numerous localities where DDT has been in use. It seems probable that an analogous condition exists in the body louse. Hitherto, great dependence has been placed on DDT for the control of typhus. It now appears to be of uncertain value, being unsuitable for this purpose in some localities.—[Herbert S. Hurlbut, Robert M. Altman, and Carlyle Nibley, Jr.: *DDT Resistance in Korean Body Lice*. *Science*, 115, (1952): 11-12.]

FOREIGN ABSTRACTS

Prolapse of the Uterus and Metrotomy

In cases of uterine prolapse in which reduction is either not possible or not advisable because of injury, amputation is necessary. The author has performed this operation successfully in 74 cases of cattle, sheep, goats, pigs, and cats. Rubber ligatures of appropriate thickness (3 mm. in large animals) are used. One is placed posterior to the insertion of the urethra, and another at 2 to 3 cm. distance. The amputation of the everted parts is performed 4 to 5 cm. from the second ligature and the wound is closed with three or four sutures.

After the operation, treatment consists of local disinfection and parenteral penicillin therapy.—[G. Roechi: *Prolapse of Uterus and Metrotomy in Female Animals*. *Schweiz. Archiv.*, 93, (1951): 756.]—F. K.

The Nervous Syndrome in Canine Leptospirosis

The author searched for *Leptospira* agglutinins in the serums, and for pathological, anatomical, and histological lesions in dogs destroyed after exhibiting nervous symptoms.

Ten young animals were serologically positive. A relation of the nervous disturbances with leptospirosis was excluded in 2 cases and 1 case was considered doubtful. In the remaining 7 cases, the disease was termed nervous syndrome of leptospirosis.

The main nervous symptoms have been seen in the form of motor irritation. Among the post-mortem lesions, circumscribed nephritis has been predominant. The brain changes have been divided into three groups: (1) no inflammatory changes, (2) serous meningoencephalitis, and (3) encephalitis with demyelination.—[U. Friediger: *The Nervous Syndrome—Does it Occur in Leptospirosis in Dogs?* *Schweiz. Archiv.*, 93, (1951): 779.]—F. K.

Intraperitoneal Anesthesia in Small Animals

In approximately 100 cases, intraperitoneal anesthesia with barbiturates (eunarcin and eripan) was performed and recommended as a suitable and reliable method for practitioners. The dosage is: for dogs—0.025 to 0.04 Gm. per pound of body weight; for cats—(male) 0.04 to 0.05 Gm. per pound of body weight, (female) 0.03 to 0.045 Gm. per pound of body weight; for rabbits—(male) 0.175 to 0.04 Gm. per pound of body weight, (female) 0.035 to 0.05 Gm. per pound of body weight.—[H. Baumgartner: *Intraperitoneal Anesthesia with Barbiturates in Small Animals*. *Berl. und Munch. tierarztl. Wchnschr.*, 7, (1951): 129.]—F. K.

Diagnostic Importance of Giant Cells in Milk Sediment

The author reported 116 findings of giant cells in milk sediment, of which 42 indicated tuberculosis of the udder and 58 were found in connection with *Brucella* infection.

In cases of tuberculosis of the udder, the giant cells were found only in 8 of 10 cases. However, it has not yet been determined if other diseases of the udder are also associated with the findings of giant cells in milk sediment.—[H. Baumgartner: *The Diagnostic Importance of Giant Cells in the Milk Sediment*. *Monatsb. fur Vet. Med.*, 21, (1951): 409.]—F. K.

Experimental Colic in Horses

A toxin was prepared from live *Strongylus vulgaris* larvae obtained from an aneurism of the anterior mesenteric artery of a horse. A small amount of the toxin injected intravenously produced typical symptoms of colic in horses. At autopsy, one case showed acute distention of the stomach and another had volvuli and infarcts of the large and small intestine. The possibility of anachylaxis from strongylid infection of the experimental horses was apparently not considered.—[E. I. Skalski and S. M. Cheglov: *On Experimental Colic in Horses*. *Veterinariya*, 28, (1951): 57.]—R. E. H.

Ophthalmic Test in Brucellosis

The method of preparing the ophthalmic antigen is not given. In an experiment with 4 artificially infected cows, the eye test became positive fifteen to thirty days after infection. The eye test was negative in 20 tubercular and 438 healthy cattle. In extensive field tests, the ophthalmic antigen was applied three or four times at five- or six-day intervals. More animals were isolated in fifteen days with the eye test than could be detected in four months with the agglutination and complement-fixation tests combined. When animals that were positive to the eye test and negative to the serological tests were left in the herd, brucellosis was not con-

trolled. When eye reactors were removed, control was satisfactory. It was recommended that the use of serological tests be continued in conjunction with the eye test.—[F. P. Loktyeva, Rostov Provincial Vet. Exp. Sta.: *Diagnosis of Brucellosis in Cattle with the Eye Test*. *Veterinariya*, 28, (1951): 23-32.]—R. E. H.

Rabies Diagnosis

The author got 12 per cent more positive results in Negri body examinations by taking sections of the cerebellum and medulla in addition to the hippocampus. He prefers sections fixed in acetic acid, chloroform, and alcohol to smears or impressions. The technique is described.—[V. A. Adutskovich: *A New Method of Postmortem Diagnosis of Rabies in Domestic Animals*. *Veterinariya*, 28, (1951): 32-33.]—R. E. H.

Carriers of Bovine Pasteurellosis

Pasteurella was isolated from the nasopharynx of 0.5 per cent of cattle in herds free from pasteurellosis. The organism was isolated from 28 per cent of cattle that had recovered from the disease. Urine and fecal cultures were negative. The culture method is not given. The author concludes that carriers are important in the transmission of pasteurellosis.—[G. A. Kaznev: *Carriers in Pasteurellosis of Cattle*. *Veterinariya*, 28, (1951): 35-37.]—R. E. H.

Cattle Infected by Tuberculous Caretakers

In the course of the general obligatory tuberculin testing of cattle in Friesland, where the keeping and selling of tuberculous cattle has been forbidden since May, 1950, it was shown that in two dairy herds an outbreak of milary tuberculosis was caused by persons affected with pulmonary tuberculosis.

In the first case, the sputum of a farm hand revealed the presence of tubercle bacilli. By typing the culture of the sputum, it was shown that the tubercle bacilli were of a pure bovine type. In the course of two years, the farm hand had infected at least 100 head of cattle.

In the other case, the farmer himself was the source of infection. In his herd, 42 head of cattle reacted positively to the intradermal test. Autopsies of the infected cattle revealed that the infection was spread by inhalation.—[P. Sjollem and A. V. I. Schaaf: *Tuberculous Caretakers as a Source of Tuberculosis in Cattle*. *Tijdschr. voor Diergeneesk.*, 76, (1951): 783-791.]—L. V. E.

Surgical Treatment of Traumatic Gastritis

An experienced veterinarian relates his observations pertaining to the treatment of traumatic gastritis. He recognizes acute, subacute, and chronic stages of the disease. He submits that after a diagnosis is established, he prefers to

operate as soon as possible. He attaches no value to symptomatic treatment and states that surgery is the only method, not accompanied by hazards, even though it may demand considerable time. The author operates in accordance with the method of Götz in which the peritoneal suture gives a feeling of security. Rumen fistulas are occasionally observed. They can usually be prevented by the use of a continuous mattress suture. This may be accompanied by the disadvantage of contamination of the wound by the rumen contents which, however, does not often give rise to serious infection.—[K. v. d. Laan: *With Reference to Traumatic Gastritis and Its Operative Treatment*. *Tijdschr. voor Diergeneesk.*, 76, (1951): 735-743.]—L. V. E.

BOOKS AND REPORTS

Sheep Diseases

While the basic principles of animal pathology are the same for all species, each presents its own peculiar problems because of differences in anatomy, physiology, life habits, environment, and, in the case of domestic animals, methods of management by man. Of the animal species of economic importance to man, the sheep has been somewhat neglected in the matter of the publication of authoritative books covering the general field of its diseases. Therefore, Dr. Newsom's "Sheep Diseases" will be welcomed by people throughout the world who are interested in sheep and their diseases.

Newsom's book covers the field of sheep diseases very thoroughly from the world viewpoint, and shows a careful study of the literature from all nations. Each section of the book includes a comprehensive list of references. The author has successfully avoided the tendency to be provincial in his handling of the material.

The book is organized in four main parts—infectious diseases, parasitic diseases, noninfectious diseases, and poisons, including poisonous plants. Approximately 175 individual disease conditions are discussed. The general pattern of the discussion of each condition includes a review of the literature to give a general idea of the most significant published observations on the etiology, distribution, and importance of the disease. This is followed by discussion of the symptoms, lesions, diagnosis, treatment, control, and prevention. There are 118 illustrations, which add to the usefulness of the book.

Dr. Newsom is to be congratulated on the general excellence of this book. It meets a long-felt definite need and is the only book of its kind and scope in the English language. It should be in the library of every institution and every individual who has occasion to come in contact with the subject. This book, with Belschner's "Sheep Management and Diseases," published in Australia in 1950, and the fifth edition of Oppermann's "Lehrbuch

der Krankheiten des Schafes," also published in 1950, constitute an up-to-date library on sheep diseases. Belschner's excellent book is a valuable contribution to the subject, covering the important Australian work with sheep diseases, while Oppermann's book is similar in scope to Newsom's, with German background.—[*Sheep Diseases*. By I. E. Newsom. 352 pages. Williams and Wilkins, Baltimore, 1952. Price \$7.00.]—HADLEIGH MARSH

The Zoology of Tapeworms

This book describes the tapeworms of the world, and is very comprehensive. It supplies a long-recognized need to consolidate the scattered literature in a single volume. The discussion of general features, life cycles, biology, origin and evolution, and history and classification is exceptionally well done. The detailed systematic descriptions and keys for identification will be especially valuable for students in the field of helminthology. There are 419 text illustrations from drawings and photographs by the authors. An exhaustive bibliography complete to the year 1950 is appended, and on each topic, as presented, a review of the literature is given.

This text does not discuss pathology or control of tapeworms and for this reason would not be too helpful to the veterinary practitioner or to the undergraduate student in veterinary medicine. It will be of great assistance to those specializing in the field of helminthology, as it is an excellent text for reference.—[*The Zoology of Tapeworms*: By Robert A. Wardle and James Archie McLeod. Cloth. 780 pages. 419 illustrations. The University of Minnesota Press, Minneapolis 14, Minn. 1952. Price \$12.50.]—R. E. REBRASSIER.

The Structure of the Fowl

This well-known outline of the gross and microscopic anatomy and embryology of the common fowl was first published in 1915. After twelve years, it appears now in a third, enlarged and revised, edition. It represents the only concise account available in the English language, in the three areas of morphology and, as such, is indispensable to students of avian and comparative anatomy and of related fields.

The section on the muscular system has been completely rewritten and the chapter on embryology augmented. The pedagogic value has been enhanced by the use of bold-faced shoulder heads or subtitles for the organs in the chapters on the various physiologic systems. The lack of collateral references is to be regretted. While maintaining the diagrammatic illustrations as text figures, the present edition is adorned by 23 plates, many containing up to six photomicrographs of histologic sections of various organs. For the most part, these illustrations are clear and instructive and technically perfect. The number of pages has been held down, actually somewhat reduced, by increas-

ing the page size to 6 by 9½ in. There has long been a need for an adequate treatise of the anatomy and histology of the common fowl. While Bradley's book does not fill this gap in the anatomical sciences, it serves admirably as a readily available elementary reference to the structure of the common fowl. The type setting by Hazell Watson and Viney Ltd. is an excellent example of British post-war printing.—[*The Structure of the Fowl*: By O. Charnock Bradley, M.D., rev. by Tom Grabame, professor of veterinary anatomy at the Royal (Dick) Veterinary College, Edinburgh. 3rd ed. 128 pages. 79 figures. 23 plates. Published for Oliver and Boyd by J. B. Lippincott, Philadelphia, Montreal, and London. 1951. Price \$4.00.]—ERWIN JUNGHER

Sheep Industry

This is the fifth in the "Animal Agriculture Series" prepared by the same author and published by the Interstate Printers and Publishers of Danville, Ill. In 15 chapters, it traces the development of the sheep industry, the distribution, breeds, breeding, feeding, judging, management, fitting and showing, and marketing. Chapter ten allots 60 pages to health, disease prevention, and parasite control, of which three-fourths, very properly, is given to a consideration of parasitic diseases. For the preparation of this chapter, the author acknowledges the collaboration of Dr. Leo Bustad, a veterinarian of Richland, Wash.

The book is profusely illustrated with 176 figures gathered from a great variety of sources. It is presented as "a practical, yet scientific reference book" for sheep and goat producers and as a "high school and college textbook," although it contains practically no reference to other literature. It carries a wealth of information on the sheep industry in this country.—[*Sheep Husbandry*: By M. E. Ensinger. Cloth. 404 pages. 176 illustrations. The Interstate Printers and Publishers, Danville, Ill. 1952. No price given.]—I. E. NEWSOM.

Parasites of Domesticated Animals in North America

This list is intended to supplement the lectures and laboratory work of a course in veterinary parasitology. Also, it should be of interest to anyone working with parasites of domesticated animals. It includes those parasites and certain related forms reported from continental North America north of Mexico.

The following information is given for each parasite or group: specific scientific name, common name, classification, location in organs or tissues, hosts, and size.—[*List of Parasites of Domesticated Animals in North America*: By Edward A. Benbrook. Rev. ed. 63 pages. Burgess Publishing Company, 426 South Sixth Street, Minneapolis 15, Minn. 1952. Price \$1.75.]—C. R. DONHAM

THE NEWS

Eighty-Ninth Annual Meeting Atlantic City – June 23-26, 1952

Facts About the 1952 AVMA Convention City

The information given below is designed to answer some of the questions members may raise about the 1952 AVMA convention city—and to help them and their families in planning for a wonderful convention-vacation in Atlantic City, June 23-26:

- 1) **If I make a last-minute decision to attend and do not have an advance hotel reservation, can I be assured of obtaining a room when I arrive?**

Yes. The Convention Bureau has promised that adequate hotel accommodations will be provided for all AVMA registrants. However,

advance reservations are urged if you want accommodations in the immediate convention area. (Use reservation form on advertising page 55 of this issue.)

- 2) **Will it be safe for ocean swimming at convention time?**

Atlantic City boasts that bathing at its ocean beaches is "as safe as in the family bathtub," and it has a big corps of efficient lifeguards to back up the claim. The ocean temperature at convention time can be expected to be in the high 60's. For more sheltered swimming, there are several indoor salt water pools at hotels, including one at the Ambassador, which will be convention headquarters.

- 3) **What kind of clothing should we bring?**

Bring mostly sports and summer clothes. You can expect the temperature to be in the low 70's during the day, after dropping to below 70 at night.

- 4) **Are there entertainment facilities for children?**

You could spend a month at Atlantic City without exhausting all the fascinating opportunities for children's entertainment. Some hotels have supervised playroom facilities, the famous Steel Pier and other resort establishments have kiddielands, and the beaches are carefully patrolled to insure youngsters' safety.

- 5) **Are there conveniently located churches?**

Atlantic City has more than 70 houses of worship to fit virtually every religious need.

AVMA Golf Tournament Scheduled for June 23

Golfing veterinarians will forget their scientific pursuits at 3 p.m. Monday, June 23, the first day of the AVMA convention, to try out the Atlantic City Country Club's greens and fairways. Some may be so unfortunate as to encounter the rough, too, of which there is plenty. Since it is practically impossible to arrange for a tournament at a good course on Saturday or Sunday, the local committee, with



The Ambassador Hotel, AVMA Convention headquarters in Atlantic City, June 23-26, 1952.

some encouragement from the golf committee, voted to hold the tournament on Monday. Since that evening is free, golfers will have the balance of the afternoon and early evening to complete their rounds. Prizes will be awarded at the President's Ball in the Westminster Hall of the Chelsea Hotel on Wednesday evening at approximately 10 p.m.

With this convenient time for the tournament, and an unprecedented rivalry predicted between several state teams, a record registration is anticipated. There will be the usual seven divisions of the tournament, with competitions between the two-man state teams expected to be the keenest. Other divisions are: AVMA member individual championship (medalist), exhibitors championship, students individual championship, low-ball gross team championship, the individual high gross score, and a blind bogey.

The winning two-man team, members of which are AVMA members and also members of their constituent associations, will receive individual trophies and prizes and their association will receive the huge AVMA golf trophy which now resides in Iowa. The medalist will receive a trophy-prize combination and the runner-up in this division also will receive a prize as will the other division winners, including the "booby" prize for the high gross score of the tournament.

Registration for the golf tournament may be made at a table in the registration area of the Ambassador Hotel on Sunday afternoon, June 22, and Monday, June 23, until 2 p.m. Participants can enroll at the Country Club right up until tee-off time but the two-man teams must be designated before teeing off. Veterinarians interested in playing in the

tournament are urged to arrange with their constituent association's secretary to be paired with another member and form a team for their association.

An announcement of the tournament plans and an entry blank will be sent to the secretaries of all constituent associations before the tournament.

Veterinarians To Be Included in National Scientific Register

The National Scientific Register has announced plans for conducting a classification survey of all United States veterinarians this spring and summer. The National Security Resources Board and the U.S. Office of Education—which already have assembled data on 150,000 individuals in major scientific fields—will carry on the survey with the assistance of the American Veterinary Medical Association.

This move to include veterinarians in the roster of scientists emphasizes the growing importance of veterinary medicine in the nation's economy. Veterinarians are urged to give prompt attention to the questionnaire when it arrives, to fill it out completely, and return it without delay.

Aim of the project is to build a sound base for long-range planning of research and technical development in order to meet currently expanding needs and to pave the way for immediately effective utilization of scientific manpower in event of another global war.

Nonmembers as well as members of the AVMA will be included. It is expected that distribution of the questionnaire will be com-

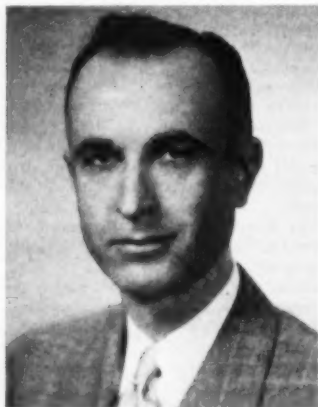
The Atlantic City golf course—located near the AVMA convention headquarters



pleted by midsummer. Information obtained on each veterinarian will be coded and transferred to machine-record cards. The electronic recording method to be used is described as the most efficient system of personnel registration yet developed.

J. J. Shaffer New Managing Director of Chicago Anti-Cruelty Society

Mr. J. J. Shaffer, who has been in charge of public relations and publicity activities conducted by the headquarters office of the AVMA for the past five years, resigned that position



Mr. J. J. Shaffer

effective March 1 to accept the position of managing director of The Anti-Cruelty Society of Chicago, succeeding Dr. W. A. Young who is now in Hollywood, Calif., as western regional manager of the American Humane Association.

Mr. Shaffer joined the AVMA staff in 1938 as editorial assistant and advertising manager and continued in those capacities until the summer of 1942 when he entered the Army as an enlisted man in the Medical Department; he was later selected for Officer Candidate School and was commissioned in the Medical Administration Corps. He saw active service at stations in this country and later as special service officer for troops in New Guinea. He also did press-public relations work for the Medical Department, Western Pacific Theatre, and was assigned to dietetics direction for the hospital center at Manila, P.I.

Upon return to the United States, he served for several months in the office of the Surgeon General, U.S. Army, Washington, as one of the editors of the history of the Medical Department in World War II. While in the Army, Mr. Shaffer rose from private to the rank of

major and is now a reserve officer. He was in three combat campaigns and received the Army Commendation Ribbon for his editorial services in the SGO. He returned to the AVMA late in 1946 and has developed and carried on several aspects of the Association's public relations work since then.

To take up Mr. Shaffer's work, the Association has employed Mr. Russell G. Rongren, effective March 24, 1952. A fuller announcement will appear in the May JOURNAL.

Fellowships Available at Michigan State

The Board of Trustees of the alumni fund of Michigan State College again offer seven predoctoral and one postdoctoral fellowship for study at Michigan State College. Predoctoral fellowships ranging from \$800 to \$1,200 are open to candidates for the Ph.D. degree. The postdoctoral fellowship has an annual value of \$3,000 and is, like the predoctoral fellowships, open to qualified candidates in any field of research for which Michigan State College has the appropriate facilities. Completed applications must be received before May 1, 1952.

Inquiries should be addressed to the dean of the School of Graduate Studies, Michigan State College, East Lansing, Mich.

S/THOMAS H. OSCOOD, *Dean*.

Second International Congress on Animal Reproduction and Artificial Insemination

A detailed program of the Second International Congress on Physiology and Pathology of Animal Reproduction and of Artificial Insemination, to be held in Copenhagen July 7-11, 1952, may be obtained by writing to E. Sorensen, secretariat of the Congress, the Royal Veterinary and Agricultural College, 13 Bolowsvej, Copenhagen V, Denmark.

The Department of State wishes to be advised, through the National Research Council, of United States delegations to the Congress. No expenses can be provided by the National Research Council or the Department of State.

S/MILTON O. LEE, *Executive Officer,*
National Research Council.

Proposed Amendments to Constitution and Administrative By-Laws

The following amendments, which were either presented at the 1951 annual meeting of the House of Representatives (see "Proceedings Book," 1951: 356-361) or have been proposed since then, will be submitted to the House for action at its annual meeting in Atlantic City, N. J., on June 21, 1952. They are published again for the information of the membership and in accordance with Section 3, Article IX, of the Constitution, and Section 3, Article XIII, of the Administrative By-Laws.

Amendments Proposed in 1951

AMENDMENT No. 1

To amend Section 3, Article VIII, Administrative By-Laws, relating to election of Executive Board members, amend the second sentence to read: the ballots are counted at the end of thirty days.

Amend the third sentence so that it will read: the five nominees receiving the highest number of votes are declared the candidates whereupon a second ballot upon which the names of the five candidates, their addresses, school and year of graduation, and type of professional work engaged in, are printed and sent to all members in the district with the request to mark an "X" before the name of their favorite candidate.

Amend the fourth sentence to read: At the end of a second thirty days, the polls are closed and the ballots counted by a committee of tellers selected from the membership by the executive secretary.

[Purpose.—(1) To shorten the time (now nearly five months) required to complete election of new members of the Executive Board. Experience shows that few, if any, ballots are received after the first thirty days in both the nominating and final elections. (2) To provide basic information to members about the men nominated for the Board. Requests for such information are received in each election from some members who do not know the candidates.]

AMENDMENT No. 2

To amend Sections 1-4, Article V, administrative By-Laws. The italicized words indicate the changes and additions.

Section 1.—The executive secretary, assistant executive secretary, and editor shall be employees of the Association. The executive secretary shall be charged with carrying out the directions of the Board of Governors provided for in section 5, article V of the constitution. The assistant executive secretary and editor shall be responsible to the Board of Governors through the executive secretary.

Section 2.—Election: The executive secretary, assistant executive secretary, and editor are elected (and may be dismissed for cause) by the Board of Governors (composed of the chairman of the Executive Board, the president and the president-elect) acting for, and under the direction of, the Executive Board.

The report of their election shall be included in the annual report of the Executive Board to the House of Representatives.

Section 3.—The executive secretary and assistant executive secretary shall be the general managers of the Association. They shall direct the entire business of the Association, including the clerical work of the Association and of the Executive Board.

Section 4.—The executive secretary shall act as managing editor of the JOURNALS and may,

upon approval of the Executive Board, employ such editorial and secretarial assistance as the Executive Board may deem necessary for the conduct of his office.

The executive secretary shall present a written report of his activities and of the Association's affairs at each regular annual session of the Association.

The executive secretary and assistant executive secretary shall furnish the Executive Board bonds of such amount as said Board may prescribe.

[Purpose.—To make the By-Laws in question more applicable to the present organization and management of the central office and its work and to include the editor as one of the personnel employed by the Board of Governors as is actually the case.]

AMENDMENT No. 3

To amend Section 3, Article XIII, Administrative By-Laws, so that it will read as follows:

Excepting sections affecting the corporate officers provided in the Constitution, the Administrative By-Laws may be permanently amended at any annual session by submitting in writing, or by publication in the official JOURNAL, notice thereof to all the membership ninety days prior to the annual session at which final action is to be taken. Publication of proposed amendments in the JOURNAL shall be regarded as due notification to the members.

[Purpose.—To conserve space in the JOURNAL by eliminating the requirement that proposed amendments be published in three consecutive issues.]

AMENDMENT No. 4

To amend subparagraph (c), Section 1, Article XI, Administrative By-Laws, so that it will read:

Invitations for annual sessions shall be filed with the executive secretary not less than two years and four months prior to the date of the session concerned, and they shall be presented to the House of Representatives for action at least two inter-convention years before the meeting is to be held.

[Purpose.—To permit action on convention invitations as far in advance as may be desirable under present conditions.]

AMENDMENT No. 5

To amend subparagraph (d), Section 4, Article VIII, Administrative By-Laws, so that it will read:

The Board shall define the eligibility of all applicants for membership and act upon all charges of misconduct filed against members.

[Purpose.—To better define the duty of the Executive Board with respect to applicants.]

New Proposals

The following new proposals for amendments to the Administrative By-Laws were approved

by the Executive Board at its meeting on Nov. 29, 1951, for submission to the House of Representatives at the annual meeting of the House, June 21, 1951. They are also published for the information of the membership in accordance with Section 3, Article XVIII, of the By-Laws.

NEW PROPOSAL No. 1

To amend subsection 12, Section 3, Article XII, Administrative By-Laws, so that the designation of the field of x-ray on the Research Council personnel shall be termed "radiology."

[Purpose.—The Research Council recommends the change as more correct terminology.]

NEW PROPOSAL No. 2

To amend various paragraphs and subparagraphs of Section 3, Article X, Administrative By-Laws, relating to dues so they will read as follows:

Subparagraph (c)—Change the first sentence so that it will read as follows: Dues shall be \$15 a year, of which \$6 is for payment of one year's subscription to the official JOURNAL of the Association.

Subparagraph (d)—The membership fee shall be \$5, and dues, which includes subscription to the JOURNAL, shall be \$15. Both are payable in advance at the time the application is filed. But, in order that the dues and subscription shall run from January 1 of each year, the following amounts shall be remitted with each application filed during a given month.

January	\$20.00	July	\$12.50
February	\$18.75	August	\$11.25
March	\$17.50	September	\$10.00
April	\$16.25	October	\$8.75
May	\$15.00	November	\$7.50
June	\$13.75	December	\$6.25

Of the annual dues of \$15, \$6 is to be credited as subscription to the JOURNAL.

[Purpose.—The foregoing amendments carry out the recommendation made in a resolution presented to the House of Representatives at its 1951 session by the Executive Committee of the House and adopted (see "Proceedings Book" 1951: 416-417), for the purpose of increasing the income of the Association, building up its reserves, and enabling it to expand its activities and services to the membership without incurring deficits.]

Note.—If these amendments are adopted, the Executive Board has already voted to increase the nonmember subscription price of the JOURNAL from the present \$7.50 a year to \$10.00 effective Jan. 1, 1953.

STUDENT CHAPTER ACTIVITIES

Alabama Chapter.—Officers of the Alabama Polytechnic Institute Student Chapter of the AVMA elected at a meeting early this year are: C. Bert Hill, president-elect; Robert S. Mullins, vice-president; J. Brannen Murphy, secretary;

and F. Earl Becker, treasurer. Walter L. Martin, former president-elect was installed as president. E. C. Sharman, editor of the *Auburn Veterinarian*, will represent the Chapter at the annual meeting of the AVMA in Atlantic City in June.

S/J. BRANNEN MURPHY, Secretary.

Missouri Chapter.—The University of Missouri Student Chapter of the AVMA held a



Dr. Stanley Smith receives scroll from Dr. A. H. Groth presented in recognition of his long and outstanding service as a veterinarian, teacher, and citizen of Columbia.

special meeting on Jan. 21, 1952, at which Dr. Stanley Smith (NYC '92) was presented a scroll from the faculty and students, honoring him on his eightieth birthday. Dr. Loren Reid, of the University speech department, gave an interesting talk on the art of public speaking.

The following officers were elected for the ensuing year: Vern E. Owens, president-elect; Robert L. Espey, vice-president; Joseph O. Minnick, secretary; and Kenneth Knoernschild, treasurer.

S/JOSEPH O. MINNICK, Secretary.

Ohio Chapter.—The following is a summary of the activities of the Ohio State University Student Chapter of the AVMA during the first semester of the 1951-1952 school year.

Dr. O. Norling-Christensen, member of the Executive Board of the AVMA, addressed the first meeting of the Chapter on Oct. 10, 1951, telling of the activities of the parent organization. Dean W. R. Krill welcomed the freshman class into the student chapter and the veterinary college. The total membership in the Chapter was 260, 96 per cent of the total enrollment in the College of Veterinary Medicine, with the freshman class having 100 per cent membership.

Dean L. L. Rummell, of the College of Agri-

culture, discussed the relationship of agriculture to veterinary medicine at the November 7 meeting. On November 24, **Dr. Roy Burkhardt**, national authority on family relations, ad-



Dr. Forman (right), vice-president of Friends of the Land and editor of the "Ohio State Medical Journal," addressing the Ohio State University Student Chapter of the AVMA.

dressed the group on "The Professional Man and His Family."

A panel of livestock leaders discussed "How the Veterinary Profession Can Better Serve the Livestock Industry" at the meeting on December 5. **Dr. Forman**, vice-president of the National Friends of the Land, gave an interesting lecture on "The Relation of Soil Fertility to the Health of Man and Animals" at the Jan. 9, 1952, meeting. On January 23, the program consisted of a panel of local veterinarians who discussed hospital construction.

On February 6, **Mr. Chet Long**, WBNS news commentator and winner of the Columbus man of the year award, gave an interesting illustrated lecture on his European trip.

James Rosenberger, president of the Chapter, was presented the Borden award by Dean Krill for having the highest scholastic record for the first three years.

S/STANLEY TSCHANZ, Program Chairman.

Pennsylvania Chapter.—At a meeting of the University of Pennsylvania Student Chapter of the AVMA on Feb. 5, 1952, **Dr. Donald G. Lee**, faculty member of the University of Pennsylvania School of Veterinary Medicine, discussed "Sterility in Dairy Cattle" and "Anatomy of the Genital Tract." **Dr. George Graham**, also a faculty member, reviewed the motion pictures "Lungworm Disease of Cattle" and "Bovine Coccidiosis" at the February 27 meeting. On March 12, **Dr. F. R. Beaudette**, Rutgers University, New Brunswick, N. J., presented a paper on "The Historical Aspects of Veterinary Medicine." **Dr. Jacques Jenny**, of the University of

Pennsylvania School of Veterinary Medicine, spoke on "Treatment of Fractures" at the March 26 meeting.

Dr. George C. Poppensiek, Virus Research Institute, Cornell University, is scheduled to discuss "Research in Virus Diseases of Dogs" on April 9 and on April 23. **Dr. J. Walter Hastings**, president of the Alumni Association of the University of Pennsylvania School of Veterinary Medicine, will address the group.

The following officers are currently serving the Chapter: **Laurs S. Nilsson, Jr.**, president; **Paul W. Husted**, president-elect; **Amos P. Hollister**, secretary; and **Richard C. Horn**, treasurer.

S/AMOS P. HOLLISTER, Secretary.

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Oklahoma Chapter.—A special meeting of the Oklahoma A. & M. College Student Chapter of the AVMA was held Jan. 21, 1952, to give members an opportunity to hear **Dr. C. D. Van Houweling**, assistant executive secretary of the AVMA, discuss the numerous responsibilities and functions of the AVMA. His talk was accompanied by a series of slides which aided in impressing the listeners with the variety of activities carried on by the Association to promote the welfare of the veterinary profession.



Dr. Van Houweling (right), assistant executive secretary of the AVMA, presents the Oklahoma A. & M. College Student Chapter charter to **Dean C. H. McElroy**, while **Lawrence Valentine**, president of the Chapter, looks on.

Those who heard Dr. Van Houweling will have a much better understanding of the AVMA and the place the student chapter occupies in the national organization.

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Washington Chapter.—The State College of Washington Student Chapter of the AVMA elected the following officers in January, 1952: **Lynn George**, president; **Jim Pickrell**, vice-president; **Bob Strong**, secretary; **Bill Gitzen**, treasurer; **Lou Polansky**, athletic chairman; and **Richard Reid**, publicity chairman. All

officers are in their third year in the College of Veterinary Medicine. The president's term of office extends for one year, and the officers will serve for one semester.

The chapter program for this semester includes three speakers, and arrangements are being made with the University of Washington Medical School to have films from the medical school film library made available to the Chapter.

S/RICHARD D. REID, *Publicity Chairman.*

WOMEN'S AUXILIARY

Auxiliary Membership.—Motives for joining organizations vary. Some pay dues to a group but never expect to participate or "get anything" out of this association. Others become members of a group because they want to be affiliated with an organization which strives for certain achievements and carries on a worthy course of action. We have asked several women to answer the question: "What does membership in the Auxiliary to the AVMA mean to me?"

S/(MRS. C. E.) HELEN BILD, *President.*

I have been a member of the AVMA Auxiliary since its origin in 1917, I have watched it grow from a small group of earnest women, with the purpose of assisting the families of veterinarians who were then in World War I, to a flourishing organization of more than 2,000 women interested in the welfare of our veterinary students and in informing the public of the value of veterinary service.

It has withstood the test of time, from the days when we travelled by slow train or in automobiles with only side curtains to keep out the rain or sand, to the present when we can travel in luxurious cars, trains, or planes. I am proud to belong to an auxiliary which seeks to serve, as well as to enjoy, the pleasure of friendly association.—Mrs. James D. Grossman, Columbus, Ohio.

Membership in the AVMA Auxiliary gives me a feeling of satisfaction in knowing that I am helping in a very small but effective way to raise the standards of my husband's profession. Knowing that the small yearly dues which I pay is used collectively with others for scholarships and research in the veterinary field, I feel that there is no finer way for me to assist in the movement to create good will and understanding for veterinary work. Value received on this membership makes it one of the better investments of today.—Mrs. Frank Jordan, Abilene, Kan.

In the early 1900's, a group of wives who "came along" with their husbands to the AVMA convention were visiting. One said she had been snubbed

at public gatherings because her husband was a veterinarian; others agreed and said they refused social invitations because of similar treatment. Could those same women have been members of a group, the social hurts would have been unimportant. So, to me, membership in the AVMA Auxiliary gives me a sense of being a part of an acknowledged order of women, united to present the profession of their husbands as a benefit to humanity through their knowledge of the livestock industry and their skill in the protection and conservation of food.—Mrs. C. D. Folse, Kemah, Texas.

First of all, membership in the AVMA Auxiliary means supporting my husband in his profession. It means supporting an organization which does much to help veterinarians. I think now of the Student Loan Fund. I know this is a great help. It was to us when my husband was in school. It was a good feeling to know that someone had enough faith in the future of a young veterinarian to loan him some money to become one. Now through supporting the Auxiliary I can help someone else. With the Auxiliary now supporting the research program we can all have a share in new and better things to come; not only for the veterinarians but for the good of all.—Mrs. R. W. Gold, Salt Lake City, Utah.

Realizing the importance of the worthwhile work the Auxiliary is doing, in helping needy students, in giving to the research fund of the AVMA, and each year awarding a \$25 prize to a member of the senior class of each accredited veterinary college for his contribution in helping to elevate the profession, I feel it is an honor, and has meant much to me, to be a member of the organization.

Being a member affords us a real opportunity to become better acquainted with others from all over the United States, Canada, and foreign countries. It helps us to make friends, by being a friend, and to develop a happy and interested attitude toward each other.

We have the opportunity to associate with the highest type of people, and the friends we make through the Auxiliary will be our friends as long as we shall live.

Since it is every one's desire to be successful, we as wives of veterinarians can do much to help those who need encouragement and to promote loyalty and good friendship among ourselves and others, and by so doing we enrich our lives with many pleasant memories.

For the past five years it has been my good fortune to serve as faculty advisor to the Junior Auxiliary in our college. I never fail to emphasize the importance of the members becoming affiliated with their state and the national auxiliary. From my own experience, I know the pleasure that awaits them.—Mrs. Walter R. Krill, Columbus, Ohio.

Luncheon for Student Auxiliary.—During the winter conference of the New York State Veterinary Medical Society at Cornell University, the Women's Auxiliary to the New York State Veterinary Medical Society entertained the members of the Women's Auxiliary to the New York State Veterinary College Student Chapter of the AVMA at a luncheon. Approximately 60 members of the student Auxiliary and 35 members of the state Auxiliary were in attendance.

Mrs. William Hagan, president, extended greetings from the state Auxiliary, and Dr. John R. Wells, Palm Beach, Fla., president of the AVMA, was introduced. He spoke briefly of the fine meeting and the good attendance.

Mrs. William Dennis, Jamestown, N. Y., spoke of her long and varied experience as the wife of a veterinarian. The qualities which she found of great value to a successful practice were patience, intelligence, and sympathy. She urged that young veterinarians be encouraged to become members of their local, state, and national associations, stating that friendships and contacts made in this way would be of lasting value. Her account of the many problems which confronted her as the wife of a veterinarian and how she solved them were most interesting and instructive.

s/Mrs. C. E. DeCAMP, Secretary.

Illinois Auxiliary.—The tenth annual meeting of the Women's Auxiliary to the Illinois Veterinary Medical Association was held in the Sherman Hotel in Chicago on Jan. 23-25, 1952, with 149 women registering. In the absence of Mrs. O. Norling-Christensen, president, who was unable to be present due to illness, Mrs. W. G. Raudabaugh, president-elect, presided over the group.

At the business meeting, Mrs. C. M. Rodgers, Blandinsville, secretary of the Women's Auxiliary to the AVMA, told of the Auxiliary's two new projects—participation in the news dissemination program of the AVMA and cooperation with the Research Fund Raising Committee. The Illinois Auxiliary voted to give \$100 to the animal disease research program of the AVMA and \$25 to start a fund for the expense of preparing *The Bulletin*, publication of the International Women's Auxiliary to the veterinary profession. The revised constitution was read and adopted.

New officers elected at this meeting are: Mrs. W. G. Raudabaugh, Piper City, president; Mrs. L. J. Miller, Lincoln, president-elect; Mrs. A. H. Gaffin, Clinton, vice-president; Mrs. Russell H. Thompson, Collinsville, secretary; and Mrs. A. A. Legner, Sandwich, treasurer.

Social activities included a tea, at which a humorous reading was given by Mrs. G. I. Case and a book review was presented by Mrs. Russell Thompson; luncheon in the Swedish

Club, at which Mrs. W. A. Young led the group in singing, an interesting skit was presented by the eastern group, and Mrs. A. E. Bott, Bellville, told of her recent visit to South America.

s/(Mrs. C. B.) ZELLA KRONE.

Iowa Auxiliary.—Approximately 230 women were in attendance at the annual meeting of the Women's Auxiliary to the Iowa Veterinary Medical Association on Jan. 16-18, 1952, at the Hotel Fort Des Moines in Des Moines. Mrs. C. E. Bild, Miami, Fla., president of the Women's Auxiliary to the AVMA, was a guest at the meeting.

The social activities included a luncheon, a silver anniversary observance of the Auxiliary, a talk on collection of china and glass, and the banquet and dance. Those who planned the entertainment were: Mrs. H. S. Lames, Dysart; Mrs. C. B. Strain, Dunkerton; Mrs. C. E. Johnson, Des Moines; and Mrs. Wm. Andrews, Greene.

Officers who will serve during the coming year are Mrs. R. E. Weber, Bancroft, president; Mrs. V. C. Willis, Waucoma, president-elect; Mrs. C. L. Nelson, Jewell, vice-president; Mrs. C. H. Koll, Des Moines, secretary; and Mrs. C. W. Brown, Des Moines, treasurer.

s/Mrs. C. H. KOLL, Secretary.

Kansas City Auxiliary.—The Women's Auxiliary to the Kansas City Veterinary Medical Association met in the Continental Hotel on February 19, with Mrs. R. C. Klussendorf as a guest. This was a social evening with the opportunity to become better acquainted with new members and to renew older friendships. Mrs. John L. Manning was program chairman.

s/Mrs. W. W. WEMPE, Secretary.

Minnesota Auxiliary.—The Women's Auxiliary to the Minnesota State Veterinary Medical Society met at the St. Paul Hotel in St. Paul on Jan. 14-16, 1952. In spite of icy roads and bad weather, 85 members and 5 visitors registered.

On the first afternoon, a Swedish coffee party, with the wives of the senior veterinary students from the University of Minnesota as guests, gave everyone a chance to get acquainted.

The annual business meeting was held after a breakfast on January 15. The president of the student auxiliary, Mrs. R. Palmer, brought greetings from her group and told of its activities. The delegate to the house of representatives gave a report of the meeting of the national Auxiliary in Milwaukee.

On January 16, the women were guests at a luncheon in the Hotel Lowry given by the Minneapolis Veterinary Medical Society.

The following officers were elected: Mrs. F. W. Gehrman, Minneapolis, president and delegate to house of representatives; Mrs. H. E. Schwermann, New Ulm, first vice-president;

Mrs. D. E. Trump, Owatonna, second vice-president; Mrs. A. J. Schladweiler, Madison, secretary-treasurer; and Mrs. L. E. Jenkins, Minneapolis, corresponding secretary.

s/(Mrs. R. A.) ALICE MERRILL, *Past-President*.

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Mississippi Auxiliary.—The Women's Auxiliary to the Mississippi Veterinary Medical Association held its annual meeting in Edgewater Gulf, Jan. 25-26, 1952, with 25 members in attendance.

New officers elected at this time are: Mrs. R. H. Stewart, Greenwood, president; Mrs. Ben Huston, Laurel, vice-president; and Mrs. Jack Ross, Jackson, secretary-treasurer. Mrs. J. P. Carney, Meridian, was elected delegate to the House of Representatives of the Women's Auxiliary to the AVMA.

s/(Mrs. S. M.) LUCILLE COX, *President*.

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New Jersey Auxiliary.—The annual meeting of the Women's Auxiliary to the New Jersey Veterinary Medical Association was held on Feb. 7, 1952, at the Hotel Hidlebrecht, Trenton, following a luncheon.

Mrs. John H. Spurlock, Allentown, the general chairman of the local planning committee for women's activities at the AVMA convention in Atlantic City, June 23-26, announced that plans were underway for the women's entertainment at that time.

Mrs. Robert Shomer, Teaneck, who attended the Milwaukee meeting of the national Auxiliary, reported briefly on that meeting.

Mrs. James Savage, Allamuchy, was appointed representative to the House of Representatives of the Women's Auxiliary for the Atlantic City meeting, June 23-26, 1952.

s/(Mrs. A. F.) JANE E. NORTH, *Secretary*.

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Ontario Auxiliary.—The seventh annual meeting of the Women's Auxiliary to the Ontario Veterinary Association was held in the General Brock Hotel, Niagara Falls, on Jan. 24, 1952. Mrs. H. S. MacDonald, Toronto, president-elect of the Women's Auxiliary to the AVMA, brought greetings from that organization. Mrs. T. Hawke, Cobourg, was elected delegate to the Auxiliary House of Representatives for the meeting in Atlantic City, with Mrs. R. McGilvray, Toronto, as alternate. A new project, a donation to the AVMA Research Fund, was added to the 1952 program.

The following officers were elected at this meeting: Mrs. Eileen Kealey, Ottawa, president; Mrs. T. Hawke, Cobourg, first vice-president; Mrs. J. Dancy, Aylmer, second vice-president; Mrs. S. T. Bodendistel, Stouffville, secretary; and Mrs. J. Johnson, Waterloo, treasurer.

s/MRS. S. T. BODENDISTEL, *Secretary*.

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South Carolina Auxiliary.—The Women's Auxiliary to the South Carolina Veterinary

Medical Association met at the Jefferson Hotel, Columbia, on Jan. 15, 1952, with 27 members and two visitors present. President Mrs. F. P. Caughman, Jr., Columbia, presided.

During the business session, the Auxiliary voted to send \$10 to the library of the School of Veterinary Medicine at Auburn, Ala., to be used as needed. A like amount was sent to the University of Georgia School of Veterinary Medicine at Athens.

A nominating committee was appointed by the president and will report at the summer meeting to be held at Clemson College.

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Texas Auxiliary.—The business meeting of the Women's Auxiliary to the State Veterinary Medical Association of Texas was held Jan. 25, 1952, in the Nueces Hotel, Corpus Christi. Dr. C. D. Van Houweling, assistant executive secretary of the AVMA, told of the plan of the AVMA for assistance with publicity for local groups and individuals. He explained the Research Fund, its need for increased funds, and some methods the women might use to help in this. Later, the Auxiliary voted to contribute \$25 to the fund.

The following officers were elected: Mrs. Chas. W. Koberg, San Angelo, president; Mrs. Richard C. Bass, Houston, president-elect; Mrs. Chas. R. Tubbs, Cuero, vice-president; Mrs. G. W. Parker, San Antonio, secretary-treasurer; and Mrs. Troy White, Athens, corresponding secretary.

s/(Mrs. C. D.) BELLE S. FOLSE,
Retiring Secretary.

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Vermont Auxiliary.—The winter meeting of the Women's Auxiliary to the Vermont Veterinary Medical Association was held Jan. 31, 1952, at the Montpelier Tavern Hotel, Montpelier.

Mrs. David Walker, Morrisville, president, conducted the business meeting. Officers elected for the following year are Mrs. James E. Wheeler, St. Albans, and Mrs. Wesson D. Bolton, South Burlington. Mrs. Edwin M. Powers, Bedford, was appointed chairman of a committee to choose a graduating veterinary student from the state of Vermont as the recipient of an award from the auxiliary. Mrs. Alan W. Wright was appointed delegate to the Auxiliary House of Representatives. Following the meeting, the women enjoyed a luncheon, and spent the afternoon visiting and shopping in Montpelier and Barre.

s/MRS. W. D. BOLTON, *Secretary*.

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West Virginia Auxiliary.—The Women's Auxiliary to the West Virginia State Veterinary Medical Association met at the Greenbrier Hotel in White Sulphur Springs, on Feb. 17-18, 1952, with 15 members and several guests from the Virginia Auxiliary present.

Mrs. Anthony E. Bott, Belleville, Ill., president of the International Auxiliary to the Vet-

erinary Profession, gave a delightful travelogue of her recent tour of South America where she visited veterinarians and their wives and attended the Pan American Congress of Veterinary Medicine in Lima, Peru.

After the annual luncheon, the women enjoyed Mrs. E. C. Curry's demonstration and lecture on flower arrangements.

S/MRS. H. P. BUCKLEY, *Secretary*.

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Wisconsin Auxiliary.—On Jan. 8, 1952, the Women's Auxiliary to the Wisconsin Veterinary Medical Association met in the Schroeder Hotel in Milwaukee.

After the business meeting, a style show and luncheon was held in the Empire Room of the Hotel. The program following the luncheon featured Mrs. Ilse Tuttle of Milwaukee, who discussed and demonstrated hand weaving as a hobby.

The Women's Auxiliary to the Wisconsin Veterinary Medical Association takes this opportunity to say we enjoyed entertaining the members of the AVMA Auxiliary in Milwaukee last August. It was their enthusiasm that made our plans a success.

S/(MRS. D. K.) BETTY SORENSEN, *Secretary*.

APPLICATIONS

Applicants — Members of Constituent Associations

In accordance with paragraph (b) of Section 2, Article X, of the Administrative By-Laws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., the names of applicants residing within the jurisdictional limits of the constituent association shall be published once in the JOURNAL.

The following applicants have been certified as members of the constituent association that has jurisdiction over the area in which the applicant resides. This certification was made by the secretary of the constituent association in accordance with Section 2, Article X, of the Administrative By-Laws.

BALUYUT, PRIMITIVO M.

4101 S. Halsted St., Room 211, Chicago 9, Ill.
D.V.M., University of the Philippines, 1940.

BEAUCHAMP, RALPH R.

P.O. Box 362, Gainesville, Fla.
D.V.M., Alabama Polytechnic Institute, 1947.

BLADES, ROBERT RAYFORD

Box 268, Kentwood, La.
D.V.M., Texas A. & M. College, 1949.

CAMERON, FORREST R.

Hawley, Minn.
D.V.M., McKillip Veterinary College, 1918.

CAMPBELL, GILBERT N.

Room 112, Exchange Building, West Fargo, N. Dak.
D.V.M., McKillip Veterinary College, 1918.

CANTWELL, WILLIAM H.

Shawano, Wis.
D.V.M., Chicago Veterinary College, 1918.

CARAWAY, HUGH LOUIS

5911 St. Vincent Ave., Shreveport, La.
D.V.M., Kansas State College, 1943.

COLLIER, JAMES R.

8800 Sacramento, Evergreen Park, Ill.
D.V.M., Ohio State University, 1932.

COPENHAVER, CHARLES E.

3526 Washington Ave., Houston 7, Texas.
D.V.M., Texas A. & M. College, 1951.

CRIMMINS, L. T.

1283 Jefferson Terrace, Macon, Ga.
D.V.M., University of Georgia, 1950.

DICKSON, JOHN THOMAS

Rt. 1, Box 26, Rock Hill, S. Car.
D.V.M., Kansas City Veterinary College, 1916.

DI COLA, JAMES NICHOLAS

Kerrobart, Sask.
D.V.M., Ontario Veterinary College, 1951.

EINERSON, W. J.

Lakota, N. Dak.
D.V.M., Iowa State College, 1945.

GLASCOCK, DALE W.

3010 S. Abingdon St., Arlington, Va.
D.V.M., Iowa State College, 1928.

HAWS, ARTHUR B.

529 South Broadway, Salina, Kan.
D.V.M., Texas A. & M. College, 1948.

HUFF, RAYMOND S.

48 Trinity St., Newton, N. J.
V.M.D., University of Pennsylvania, 1916.

HUNT, GLEN W.

Box 68, Opelousas, La.
D.V.M., Alabama Polytechnic Institute, 1950.

KNOX, EARL L.

3900 Western Boulevard, Raleigh, N. Car.
D.V.M., University of Georgia, 1951.

LACEY, LEE THOMAS

Rt. #2, Box 121½, Oakdale, Calif.
D.V.M., Texas A. & M. College, 1943.

LLOYD, WILLIAM EUGENE

Essex, Iowa.
D.V.M., Iowa State College, 1949.

PETERSON, EDWIN D.

Hughesville, Md.
D.V.M., McKillip Veterinary College, 1913.

MILLER, JAMES GREGORY

Dept. of Veterinary Science, Louisiana State University, Baton Rouge 3, La.
D.V.M., Ontario Veterinary College, 1949.

SALABARRIA, JULIO

1385 Northwest Fifteenth St., Miami, Fla.
D.V.M., University of Havana, 1939.

SCHRANK, BENJAMIN M.

1468 Superior Road, Cleveland Heights, Ohio.
D.V.M., Ohio State University, 1940.

SHELTON, GEORGE CALVIN

23-C Hare Apartments, Auburn, Ala.
D.V.M., Texas A. & M. College, 1948.

SMITH, ALPHONSO

1529 Richmond Ave., Columbus, Ohio.
D.V.M., Ohio State University, 1923.

- STILLINGER, CLARK J.
1742 East Holt Avenue, Pomona, Calif.
D.V.M., Iowa State College, 1943.
- WHITE, EDWARD H.
Hickory, Pa.
D.V.M., Iowa State College, 1925.
- YOUNG, BRONZE C.
1801 Plant Ave., Waycross, Ga.
D.V.M., Alabama Polytechnic Institute, 1947.

Applicants — Not Members of Constituent Associations

In accordance with paragraph (b) of Section 2, Article X, of the Administrative By-Laws, as revised at the annual meeting of the House of Representatives, Aug. 18, 1951, in Milwaukee, Wis., notice of all applications from applicants residing outside of the jurisdictional limits of the constituent associations, and members of the Armed Forces, shall be published in the JOURNAL for two successive months. The first notice shall give the applicant's full name, school, and year of graduation, post office address, and the names of his endorser.

First Listing

- KERBY, DUBON R.
345 Lerma Apt. 203, Mexico, D.F.
D.V.M., Texas A. & M. College, 1943.
Vouchers: Walter A. Schuehle and Mark Field.

Second Listing

- LEON MANUEL MUELLE, Hacienda Pachacayo, Pachacayo, Peru.

U. S. GOVERNMENT

Short Course in Laboratory Diagnosis of Rabies.—A short course in the laboratory diagnosis of rabies will be held April 7-11, 1952, at the laboratories of the Communicable Disease Center in Chamblee, Ga.

The course is designed as a practical refresher type of laboratory training to insure proficiency in the various aspects of rabies diagnosis. There are no tuition or laboratory fees, but travel and living expenses must be paid by the individual or his employer. Applications should be directed to Dr. R. F. Reider, in charge, Laboratory Training Services, Communicable Disease Center, Public Health Service, P. O. Box 185, Chamblee, Ga.

s/ERNEST S. TIERKEL.

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Psittacosis Quarantine Changes.—Changes in the quarantine regulations covering importations of psittacine birds from abroad became effective on Dec. 15, 1951; changes governing interstate shipments went into effect Nov. 15, 1951.

The changes include: removal of the minimum 8-month age limit on imported birds; a reduction from two years to four months in the time imported pets must be in the owner's possession before entry; removal of the requirement that imported pet birds must go directly to the owner's residence; and the addition of a requirement of an affidavit that the birds imported as pets are not to be sold.

Changes in interstate quarantine regulations no longer restrict shipments except from areas designated by the Surgeon General as dangerous. However, a permit is still necessary where required by the state of destination.

The changes were made because (1) psittacosis is no longer considered a major public health problem, and (2) it is found in other than psittacine birds.

The AVMA Committee on Diseases of Zoological Park Animals acted in an advisory capacity to the U.S. Public Health Service in developing these regulations.

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Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U. S. Bureau of Animal Industry are reported as of Feb. 8, 1952.

NEW APPOINTMENTS

- Leopold Buyvid, Newark, N.J.
John F. Carnes, Boise, Idaho.
Harold F. Culp, Des Moines, Iowa.
Loyal H. Fisk, Los Angeles, Calif.
Charles S. Hansen, San Francisco, Calif.
Clarence Otteson, Madison, Wis.
William B. Peterman, Fort Worth, Texas.
James R. Seelbach, St. Louis, Mo.
John W. Upchurch, Baton Rouge, La.
Jorge S. Simon, San Francisco, Calif., from St. Louis, Mo. (correction).

CANCELLATION

- Chester N. Harden, Boston, Mass.

RESIGNATIONS

- George Carneal, Louisville, Ky.
William B. Coughlan, Baltimore, Md.
Kenneth J. Feldman, New York, N. Y.
Oscar F. Fischer, Fort Worth, Texas.
Ralph F. Koustmer, Cincinnati, Ohio.
Elmer L. Lashua, Madison, Wis.
Raymond S. Moyer, Allentown, Pa.
Laurie D. Ramsay, Mexico City, Mex.
S. Herman Parker, Los Angeles, Calif.
Floyd M. Ward, Fort Worth, Texas.

RETIREMENTS

- Roy C. Bissell, Bismarck, N. Dak.
Cleo L. Lash, Sioux City, Iowa.
Harry A. Schneider, Harrisburg, Pa.
Robert L. Smith, Hartford, Conn.
John H. Yoder, Jacksonville, Fla.

DEATH

- Raymond F. Thomas, Atlanta, Ga.

TRANSFERS

- Mark Robert Boyer, from Peoria, Ill., to Louisville, Ky.
John J. Burgess, from Mexico City, Mex., to St. Paul, Minn.
Robert L. Digman, from Chicago, Ill., to Muncie, Ind.
Sheldon S. Farber, from Philadelphia, Pa., to Mexico City, Mex.
Philip D. Fichandler, from Hartford, Conn., to Boston, Mass.
Robert D. Lamsar, from Mexico City, Mex., to Madison, Wis.
Herman T. Ludwig, from Pittsburgh, Pa., to Los Angeles, Calif.
Affleck MacGilvray, from Fort Worth, Texas, to Houston, Texas.
William M. Peterson, from Olympia, Wash., to Sacramento, Calif.
T. Bernard Sawyer, from Fort Dodge, Iowa, to Omaha, Neb.

Herman J. Schick, from Muncie, Ind., to Austin, Minn.; Clarence C. Steibing, from Harrisburg, Pa., to Allenton, Pa.

Thomas W. Tamaglia, from Omaha, Neb., to Madison, Wis.

John E. Taylor, from Hartford, Conn., to Boston, Mass.

Arnold Wrabel, from Hartford, Conn., to Boston, Mass.

AMONG THE STATES AND PROVINCES

Arkansas

State Association.—The Arkansas Veterinary Medical Association held its annual meeting Feb. 3-5, 1952, at the Hotel Marion in Little Rock, with 65 veterinarians registering.

The meeting opened with **Dr. Allen Rice**, of the Bureau of Animal Industry; **Dr. R. W. Williams**, practitioner of El Dorado; and **Dr. Joe Campbell**, state veterinarian, discussing rules and regulations of the Arkansas Livestock Sanitary Board.

Other program speakers were **Drs. A. M. Washburn**, of the Department of Public Health; **Herman Farley**, Oklahoma A. & M. College, Stillwater; **A. H. Craig**, Pitman-Moore Company, Plainfield, Ind.; and **Paul Manning**, Abbott Laboratories, Chicago.

The officers elected at this meeting are **Drs. O. H. Meinecke**, Hot Springs, president; **Cary Clark**, El Dorado, vice-president; and **W. L. Thomas**, Little Rock, secretary-treasurer.

s/W. L. THOMAS, Secretary.

Colorado

New Association Bulletin.—The Colorado State Veterinary Medical Association has recently begun publication of a monthly bulletin, which will be called the *Bulletin* until a suitable name is selected. The staff of this new publication includes **Drs. Robert K. Anderson**, Denver, as editor-in-chief; **M. H. Camner**, Denver, business manager; **D. B. Lyvere**, Denver, assistant business manager; **Earl D. Smith**, Steamboat Springs, news editor; **N. J. Miller**, Eaton, large animal editor; **L. C. Moss**, Fort Collins, small animal editor; **M. N. Riemschneider**, Denver, animal disease control; **Charles Davis**, Denver, pathology; and **Floyd Cross**, Fort Collins, education.

s/R. K. ANDERSON, Editor.

Connecticut

Fairfield County Association.—At the regular annual meeting of the Fairfield County Veterinary Medical Association held at the Clam Box, Boston Post Road, Westport, early in February, the following officers were elected: **Drs. Robert A. Rands**, Stamford, president; **Herbert Doolittle**, South Norwalk, president-

elect; and **William R. Leggett**, Westport, secretary-treasurer.

The following men were elected to the committee on ethics: **Drs. Herbert Doolittle**; **J. B. Skelton**, Riverside; **John H. Nickerson**, Stamford; **Howard Raven**, Bridgeport; and **Russell Strasburger**, Newtown.

New members of the executive committee are **Drs. Robert A. Rands**; **Walter Holcomb**, Danbury; **Herbert Doolittle**; **William R. Leggett**; **Chester E. Guthrie**, Wilton; **Leonard A. Schulhof**, Westport; and **Edward J. Burke**, Southport. s/WILLIAM R. LEGGETT, Secretary.

Georgia

South Georgia Association.—The South Georgia Veterinary Medical Association met at the Radium Springs Hotel on Feb. 3, 1952. After the business meeting, **Dr. W. J. Gibbons** presented a paper on sterility diseases of cattle, and **Dr. J. E. Greene** demonstrated oxygen-administering equipment, ether inhalators with which oxygen and carbon dioxide can be administered simultaneously, several home-made instruments, and discussed numerous favorite remedies used in small animal practice. Both speakers are faculty members of the Alabama Polytechnic Institute School of Veterinary Medicine.

The following officers were elected: **Drs. Joe Crane**, Valdosta, chairman; **Charles Lee**, Dawson, vice-chairman; and **Wm. L. Sippel**, Tifton, secretary-treasurer.

After the meeting, the women joined their husbands for a delicious smorgasbord dinner.

s/WM. L. SIPPEL, Secretary.

Illinois

Swine Brucellosis Testing.—Reports from all sections of the state show a total of 27,787 swine tested in 1951 with 1,859 reactors (8%) and 375 suspects. In 1950, 15,862 were tested with 1,748 reactors (124 per cent) and 235 suspects. The percentage of reactors was much higher in boars than in sows.—*Univ. Illinois Exten. Vet.*, Feb., 1952.

Indiana

Michiana Association.—The Michiana Veterinary Medical Association met at the La Salle Hotel in South Bend on February 14. **Dr. C. D. Van Houweling**, assistant executive secretary of the AVMA, Chicago, spoke on public relations pertaining to the veterinary profession. Using slides, **Dr. Van Houweling** also demonstrated the tremendous amount of work the AVMA does.

Officers of the Association for 1952 are **Drs. M. L. Weldy**, Wakarusa, Ind., president; **A. W. Winters**, Benton Harbor, Mich., president-elect; **Harry Magrane**, Mishawaka, Ind., vice-president; and **M. L. Livingston**, Hartford, Mich., secretary-treasurer.

Iowa

State Association.—The sixty-fourth annual meeting of the Iowa Veterinary Medical Association was held in Des Moines on Jan. 16-18, 1952, with a registration of 629.

Program speakers included **Drs. C. P. Schmidt**, Worthington, Minn.; **I. H. Borts**, Iowa Department of Health, Des Moines; **S. L. Hendricks**, public health veterinarian, Des Moines; **H. E. Hanna**, Springville; **Jesse Sampson**, University of Illinois, Urbana; **C. K. Whitehair**, Oklahoma A. & M. College, Stillwater; **Mr. C. H. Van Vlack**, Agricultural Engineering Department, Iowa State College; **Drs. James A. Baker**, New York State Veterinary College, Cornell University, Ithaca; **W. G. Magrane**, Mishawaka, Ind.; **R. A. Packer**, Iowa State College School of Veterinary Medicine, Ames; **W. S. Gochenour**, Pitman-Moore Co., Indianapolis, Ind.; **John R. Dick**, Fort Dodge Laboratories, Fort Dodge, Iowa; **L. M. Hutchings**, Purdue University, Lafayette, Ind.; **C. W. Brown**, U. S. BAI, Des Moines; **H. U. Garrett**, state veterinarian, Des Moines; **S. H. McNutt**, University of Wisconsin, Madison; **W. L. Boyd**, St. Paul, Minn., president-elect of the AVMA; **C. L. Nelson**, Jewell; **F. S. Sharp**, Ute.

Officers elected at this meeting are **Drs. Lester Proctor**, Oelwein, president; **F. S. Sharp**, Ute, president-elect; **F. J. Linn**, Sheffield, first vice-president; **G. H. Gitz, Jr.**, Corning, second vice-president; **F. B. Young**, Waukegan, executive secretary and treasurer. **Dr. Dale S. Adams**, Webb, was elected executive board member from the first district.

Fifty-seven applicants were elected to membership at this meeting.

s/F. B. YOUNG, Secretary.

Cedar Valley Association.—The Cedar Valley Veterinary Association held its regular monthly meeting on February 11 in Black's Tea Room, Waterloo. **Dr. Bethke**, St. Louis, Mo., gave an interesting talk on the use of antibiotics in feed. It was decided by vote that the Association would not have its annual clinic this year.

Officers of the Association are **Drs. Isaac Hayes**, Waterloo, president; **Allan J. Murphy**, Winthrop, vice-president; and **F. E. Brutsman**, secretary.

s/F. E. BRUTSMAN, Secretary.

Kentucky

Rabies Control Legislation Initiated.—The Kentucky Veterinary Medical Association, the Sheep Breeders' Association, and several other livestock organizations have proposed legislation for a bill to control rabies in Kentucky. Heading the fight for this new public safety measure is **Dr. L. W. Rowles** (KCV '12), supervisor of veterinary public health for the State Department of Health, on loan from the U. S. Public

Health Service. **Dr. Rowles** compiled figures to show that in number of cases related to population and area, Kentucky leads the country in rabies, and the Bluegrass State Sheep Association said that rabid and ownerless dogs had cost Kentuckians an estimated \$3,000,000 since World War II.

The proposed law would require all dogs to be licensed, but would demand proof of rabies vaccination before a license is issued. The State Public Health Department will furnish health mobile units and equipment to hold mass vaccination clinics in the isolated and mountain counties where veterinary service is not available. Accredited veterinarians will do the actual work. **Dr. Rowles** will assist in arranging the clinics, as to time and place for the mass vaccination.

s/T. J. STEARNS, Secretary,

Kentucky Veterinary Medical Association.

Louisiana

State Association.—The twenty-first annual conference for the Louisiana Veterinary Medical Association, conducted by the Department of Veterinary Science, Louisiana State University and A. & M. College, was held on the Baton Rouge campus on Jan. 29-30, 1952, with 75 veterinarians in attendance.

Guest speakers on the program were **Drs. John R. Wells**, Palm Beach, Fla., president of the AVMA; **John Blunski**, Ferriday; **Wade Brinker**, School of Veterinary Medicine, Michigan State College, East Lansing; **Robert D. Franks**, Shreveport; **M. H. Gandy**, Baton Rouge; **W. S. Hornsby**, Lafayette; **J. G. Lee, Jr.**, dean, College of Agriculture, Louisiana State University; **Gen. Troy H. Middleton**, president, Louisiana State University; **Drs. E. F. Sanders**, Jensen-Salsbery Laboratories, Kansas City, Mo.; **Vern Scott**, Stephenville, Texas; **J. P. Thrasher**, New Orleans; and **F. B. Wheeler**, state veterinarian, Baton Rouge.

Members of the Department of Veterinary Science of the University who spoke at this meeting were **Mrs. Georgina N. Bradley**, secretary; **Drs. Charles H. Bridges**; **Arthur R. Colmer**; **R. B. Lank**; **Miss Helen E. Levy**, research assistant; **Drs. Roy L. Mayhew**; and **W. T. Oglesby**, head of the Department.

Two of the outstanding papers presented were "Practice Hints for the Small Animal Practitioner," by **Dr. John R. Wells**, and "Why we Use Antibiotics" by **Dr. Arthur Colmer**.

Officers elected for the ensuing year are **Drs. John Blunski**, Ferriday, president; **J. L. Melancon**, Bunkie, vice-president; and **R. B. Lank**, Baton Rouge, secretary-treasurer.

s/W. T. OGLESBY, Head,

Department of Veterinary Science.

Massachusetts

Bills Before Senate.—On Feb. 5, 1952, a hearing was held before the Senate Legal Affairs

Committee in Boston on senate bills 212 and 213. These bills are as follows: No. 212, an act relative to the mutilation of dogs and the exhibition of mutilated dogs; No. 213, an act repealing certain provisions of law relative to the cropping of ears of dogs and the exhibition of such dogs.

S/C. LAWRENCE BLAKELY, *Secretary*.

Michigan

New X-Ray Unit Installed at College.—Michigan State College announces the installation of a new 250,000-volt General Electric x-ray therapy unit. It will open up new fields of treatment and research in cancer and other diseases of animals, especially dogs, because they are more subject to cancerous tumors. Therapy will also be tried on such diseases as actinomycosis, vascular diseases of the eye, bursitis, and tendonitis. Michigan is the fourth veterinary school to install such x-ray equipment.

Minnesota

State Society.—On Jan. 14-16, 1952, the Minnesota State Veterinary Medical Society met in the Hotel St. Paul, St. Paul, with a total registration of 485, of which 307 were veterinarians.

The following out-of-state speakers appeared on the scientific program: **Drs. L. E. Harris**, Norden Laboratories, Lincoln, Neb.; **I. E. Hayes**, Waterloo, Iowa; **A. W. Krause**, Cherokee, Iowa; **W. G. Magrane**, Mishawaka, Ind.; **J. D. Ray**, Corn States Serum Co., Omaha, Neb.; **Wayne Riser**, Skokie, Ill.; **Harry H. Ross**, Brandon, Man.; and **James Steele**, chief, Veterinary Public Health Section, Atlanta, Ga.

Other program speakers included **Drs. W. L. Boyd**, St. Paul, dean of the School of Veterinary Medicine and president-elect of the AVMA; **O. E. Dovre**, Marshall; **Arnold Erickson**, St. Paul; **R. Fenstermacher**, University of Minnesota, St. Paul; **Mr. Wes Fesler**, University of Minnesota, St. Paul; **Drs. D. S. Fleming**, Minnesota Department of Health, Minneapolis; **Karl Knoche**, Austin; **H. A. Meehan**, St. Paul; **Art Pennings**, Minnesota; **B. J. Porter**, Minneapolis; **Ray Tabola**, Jackson; **D. S. Steele**, Minneapolis; **M. S. Thorpe**, Canby; **D. E. Trump**, Owatonna; and **R. L. West**, executive secretary, Minnesota Live Stock Sanitary Board, St. Paul.

The following officers were elected at this meeting: **Drs. G. A. Larson**, Breckenridge, president; **E. G. Hughes**, Sleepy Eye, president-elect; **D. H. Spangler**, Atwater, first vice-president; **H. C. H. Kernkamp**, St. Paul, second vice-president; and **B. S. Pomeroy**, St. Paul, secretary-treasurer. **Dr. D. E. Trump**, Owatonna, was elected to the Board of Trustees. **Drs. O. C. Selby**, Mankato, and **A. J. O'Hara**, Northfield, were voted lifetime memberships in the Society.

At the business meeting, a resolution was passed asking the University of Minnesota to take steps to gain a fully accredited status for the School of Veterinary Medicine. Another resolution urged that a grievance committee be set up to receive complaints within the practice and from the public.

S/HENRY J. GRIFFITHS, *Resident Secretary*.

Missouri

Kansas City Association.—On Feb. 19, 1952, the Kansas City Veterinary Medical Association met in the Hotel Continental, Kansas City, to hear **Dr. Ray C. Klussendorf**, director of Veterinary Medical Services, Commercial Solvents, Corp., discuss "Antibiotics, Their Production and Place in General Practice" (with illustrations). Following this, **Dr. A. H. Quin** led a general discussion on practice problems.

S/K. MAYNARD CURTS, *Secretary*.

Montana

Dr. Safford Joins Faculty of State College.—Dr. John W. Safford (WSC '38), employee of the Montana Livestock Sanitary Board since 1940 and assistant state veterinarian at Helena for the past two years, resigned on Jan. 1, 1952, to accept appointment as associate professor in the Department of Veterinary Science and as associate veterinarian in the Veterinary Research Laboratory of the Agricultural Experiment Station of Montana State College at Bozeman.

New Jersey

State Association.—The sixty-eighth annual meeting of the Veterinary Medical Association of New Jersey was held at the Hotel Hildebrecht in Trenton on Feb. 7-8, 1952. The registered attendance was 211.

The following speakers presented papers at the meeting: **Drs. J. Roger McCoy**, New Brunswick; **R. D. Hoffman**, Bedford, Pa.; **Jacques Jenny**, Philadelphia, Pa.; **Leonard J. Goss**, New York, N. Y.; **George L. Graham**, Philadelphia; **John R. Dick**, Fort Dodge, Iowa; **C. E. DeCamp**, Scarsdale, N. Y.; **H. C. Stephenson**, Ithaca, N. Y.; **Josephine Deubler**, Newtown, Pa.; **D. K. Detweiler**, Philadelphia; and **C. D. Van Houweling**, assistant executive secretary of the AVMA, Chicago.

Officers elected to serve the Association for the ensuing year are **Drs. J. R. Porteus**, Trenton, president; **Amos W. Stults**, Hopewell, first vice-president; **John M. McCarthy**, West Englewood, second vice-president; **Arthur F. North**, Somerville, treasurer; and **J. Roger McCoy**, New Brunswick, secretary.

S/J. R. PORTEUS, *President*.

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Northern Association.—The Northern New Jersey Veterinary Association met on Jan. 22, 1952, in the Casa Mana Restaurant, Teaneck.

The program featured **Dr. R. D. Weitz**, a well-known local psychologist, who spoke on "Psychology in Everyday Life."

Officers installed at this meeting are **Drs. William J. Foster**, Clifton, president; **Elliot Kaplus**, Clifton, vice-president; and **Robert R. Shomer**, Teaneck, secretary-treasurer.

The members' wives were present and a supper was served.

S/ROBERT R. SHOMER, Secretary.

Canine Cancer Clinic Reports Developments.

—The Cancer Research Committee of the Veterinary Medical Association of New Jersey reported last October that 111 cases had been referred to the canine cancer clinic at Rutgers University (see the JOURNAL, March, 1951: 205-206) by 38 veterinarians since Jan. 1, 1951. Forty of these cases were accepted for treatment, the others were either free of cancer or were afflicted with a type that called for a method of treatment that was available at the referring veterinarian's hospital and hence were returned for therapy.

In the letter sent to veterinarians, by **Dr. Arthur F. North**, chairman of the state Association's Cancer Research Committee, suggestions were included for biopsy procedures to be followed in referring cases to the clinic at Rutgers University which is under the supervision of **Dr. John H. McCoy**. A progress report on the work of the clinic is to be issued later.

New York

New York City Association.—The regular meeting of the Veterinary Medical Association of New York City, Inc., was held at the New York Academy of Sciences on Feb. 6, 1952.

The motion picture "Training War Dogs" was shown through the courtesy of the Department of the Army. **Dr. John L. McAuliff**, president, New York State Veterinary Medical Society, presented an address concerning the state Society. **Dr. Carl A. Bunde** (Ph.D., M.D.), research director, Pitman-Moore Company, read a paper on "The Chorea Syndrome in Dogs" with illustrations, and **Dr. Svende Woge Nielsen**, resident in pathology and research associate, the Angell Memorial Animal Hospital, Boston, discussed "The Malignancy Tumors in Cats" with illustrations.

S/C. R. SCHROEDER, Secretary.

North Carolina

Annual Conference.—North Carolina State College held its fourteenth annual conference for veterinarians at Raleigh on Jan. 22-25, 1952.

Special lecturers on the scientific program were **Drs. Joseph W. Beard**, Duke Medical School, Durham; **B. F. Cox**, North Carolina State College of Agriculture, Raleigh; **W. L. Cooley**, City Health Department, Greensboro; **E. H. Ellenwood**, health officer, Guilford County, Greensboro; **E. J. Frick**, Kansas State

College School of Veterinary Medicine, Manhattan; **M. P. Hines**, State Public Health Department, Raleigh; **H. G. Hodges**, supervising veterinarian, New York State Mastitis Control Program, New York State Veterinary College, Cornell University, Ithaca; **Thomas J. Jones**, dean, University of Georgia School of Veterinary Medicine, Athens; **Jacques Jenny**, University of Pennsylvania, Philadelphia; **H. C. H. Kernkamp**, University of Minnesota, St. Paul; **Mr. Paul E. Newman**, Beacon Milling Co., Cayuga, N. Y.; **Drs. G. Ott**, Fromm Laboratories, Grafton, Wis.; and **L. E. Starr**, Atlanta, Ga.

Resident speakers included **Drs. J. E. Legates**, **W. Ray Murley**, **J. Clark Osborne**, and **R. K. Waugh** of the North Carolina State College faculty, and **H. J. Rollins**, state veterinarian, Raleigh.

Dr. A. A. Husman was reelected to serve as representative to the AVMA meeting in Atlantic City.

Eleven new members were voted into the Association. They are: **Drs. J. H. Chambless**, Lexington; **L. G. Yarbboro**, Shelby; **M. P. Hines**, Raleigh; **G. P. Bullock**, Durham; **R. W. Robison**, Mooresville; **W. B. Clark**, Wilson; **D. H. Fennoy**, Greensboro; **J. Levenson**, Oxford; **M. J. Lavitan**, Charlotte; **J. W. Conaway**, Yadkinville; and **Harry Lind**, Marion.

S/CLYDE W. YOUNG, Resident Secretary.

Central Carolina Association.—On February 13, members of the Central Carolina Veterinary Medical Association met in Greensboro, N. Car., for a round-table discussion of general practice problems.

S/CLYDE W. YOUNG, Resident Secretary.

North Dakota

Short Course.—The North Dakota Agricultural College Department of Veterinary Science presented its annual short course for veterinarians on Jan. 28-30, 1952. After an opening address by **Dr. Fred S. Hultz** (Ph.D.), president of the College, the following guest speakers presented papers: **Drs. Dean E. Flagg**, Bismarck; **J. O. Foss**, Minot; **A. F. Ranney**, Bismarck; **Carl Norden, Jr.**, Lincoln, Neb.; **John Dick**, Fort Dodge, Iowa; and **George Senior**, Des Moines, Iowa.

Faculty members who participated in the program were **Mr. M. L. Buchanan**, **Drs. Earl W. Klosterman** (Ph.D.), **C. I. Nelson** (Ph.D.), **G. C. Holm**, **D. F. Eveleth**, **H. L. Walster** (Ph.D.), **F. M. Bolin**, **W. E. Dinusson** (Ph.D.), and **Louis Hablas**.

S/FREDERIK LOW, Resident Secretary.

Ohio

State Association.—The Ohio Veterinary Medical Association held its sixty-eighth annual meeting in the Deshler-Wallick Hotel at Columbus on Jan. 2-4, 1952, with 445 veteri-

narians, 175 women, and 200 veterinary students registering. This was the largest annual meeting yet held from the standpoint of attendance.

A "Who's Who" of the program includes the following: **Drs. Jacques Jenny**, University of Pennsylvania, Philadelphia; **R. J. Beamer**, Cleveland; **J. A. Winkler**, Cold Spring, Ky.; **H. E. Jensen**, Cleveland; **C. S. Alvanos**, Toledo; **J. T. Burriess**, Bexley; **W. S. Gochenour**, Pitman-Moore Co., Indianapolis, Ind.; **John R. Dick**, Fort Dodge Laboratories, Inc., Fort Dodge, Iowa; **A. H. Quin**, Jensen-Salsbery Laboratories, Kansas City, Mo.; **F. N. Andrews**, Purdue University, Lafayette, Ind.; **R. S. Smiley**, Division of Animal Industry, Columbus; **E. N. Moore**, Ohio Agricultural Experiment Station, Wooster; **R. L. Knudson**, veterinarian in charge, U. S. BAI, Columbus; **J. G. Hardenbergh**, Chicago, executive secretary of the AVMA; **H. G. Geyer**, chief, Division of Animal Industry, Columbus; **R. M. Ware**, Sydney; **D. M. Swinehart**, Elida; **C. F. Jones**, Akron; **J. R. Wynkoop**, Canal Winchester; and **E. M. Chamberlain**, **W. E. Dickerson**, **L. E. Johnson**, **D. O. Jones**, **Guy Dowdy**, and **V. L. Tharp**, of the Ohio State University faculty. **Miss Helen Kiess**, service consultant of the Ohio Bell Telephone Company also spoke.

New officers of the Association are **Drs. J. T. Burriess**, Bexley, president; **W. O. Keefer**, Springfield, president-elect; **C. W. Cromley**, Ashville, vice-president; **J. H. Helwig**, Colum-

bus, treasurer; and **F. J. Kingma**, Columbus, secretary.

Forty-two new members were admitted to the Association, and **Dr. H. S. Foust**, director of agriculture for Ohio, was made an honorary member of the Association.

The executive committee of the Association, in its business session, passed the following resolution:

Be it resolved that the Ohio State Veterinary Medical Association approves of the aims of the National Hog Cholera Eradication Committee in their endeavor toward potential eradication of hog cholera. However, final approval of the products involved shall be withheld until such time as they have proved themselves to be effective under all field conditions.

S/CHARLES D. DIESEM, *Resident Secretary.*

• • •
North Central Association.—The following officers were elected at the meeting of the North Central Ohio Veterinary Medical Association on Jan. 30, 1952, at Tiffin: **Drs. C. W. Miller**, Crestline, president; **B. W. Kagy**, Tiffin, vice-president; and **G. W. Neikirk**, Bucyrus, secretary-treasurer.

After **Dr. Kagy** gave a clinical demonstration of the techniques used in artificial insemination, **Dr. W. R. Henson**, Shelby, demonstrated dehorning. **Dr. V. L. Tharp**, Ohio State University, Columbus, showed motion pictures of bovine anatomy and embryology.



General view of the banquet held during the annual meeting of the Ohio State Veterinary Medical Association.

Ontario

Provincial Association.—The seventy-eighth annual meeting of the Ontario Veterinary Association was held at the General Brock Hotel in Niagara Falls, Ont., on Jan. 23-25, 1952.



Among the speakers at the seventy-eighth annual meeting of the Ontario Veterinary Association were Dr. A. E. Cameron (left) and Brig. Gen. J. A. McCallam.

The following speakers appeared on the program: **Drs. J. Archibald**, Ontario Veterinary College, Guelph; **G. L. Bannister**, Poultry Pathological Laboratory, Ottawa; **A. E. Cameron**, Ottawa; **C. E. DeCamp**, Pitman-Moore Co., New York, N. Y.; **R. W. Ford**, Peterborough, Ont.; **Kenneth Friderici**, Schenectady, N. Y.; **James H. Gillespie**, Veterinary Virus Research Institute, New York State Veterinary College, Ithaca; **F. J. Harden**, Prince Edward County Health Unit, Picton; **Jacques Jenny**, University of Pennsylvania, Philadelphia; **T. Lloyd Jones**, acting principal, Ontario Veterinary College, Guelph; **Claude Kealey**, Ottawa; **J. E. Leeson**, Toronto; **R. J. McDonald**, Oxford Holstein Breeders' Association, Woodstock; **W. A. Moynihan**, Health of Animals Division, Production Service, Dominion Department of Agriculture, Ottawa; **A. H. Quin**, Jensen-Salsbery Laboratories, Inc., Kansas City, Mo.; **S. J. Roberts**, Department of Medicine, New York State Veterinary College; **G. J. Rourke**, Hamilton District Cattle Breeding Association, Inc., Hannon; **Jean Rumney**, Hamilton; **Alan C. Secord**, Toronto; **H. V. Skelding**, Gananoque; **H. F. Wilder**, Buffalo, N. Y.; **R. H. Wright**, Dundas; **Brig. General J. A. McCallam**, chief, Veterinary Division, Department of the Army, Washington, D. C.

Of particular interest were the talks given by **Dr. A. H. Quin** and **Brig. General J. A. McCallam**. The former spoke on "Newer Problems in Swine Diseases—Control and Treatment" and showed a film on atrophic rhinitis. General McCallam's subject was "The U. S. Army Veterinary Service." Two guided discussion panels on small animal practices were

presented—one by the United States veterinarians in the Niagara Falls area, and the other by a group of Canadian veterinarians.

Officers of the Association for 1952, elected at this meeting, are **Drs. Orlan Hall**, Ottawa, president; **T. Lloyd Jones**, Guelph, first vice-president; **C. W. McIntosh**, Ottawa, second vice-president; **G. A. Edge**, Toronto, secretary-treasurer and registrar. **Drs. H. R. Potter**, Stamford Centre; **Orlan Hall**, Ottawa; and **J. E. Johnson**, Waterloo, were elected to the Ontario Veterinary Practice Board.

S/T. **LLOYD JONES**, Resident Secretary.

Pennsylvania

Bucks-Montgomery Association.—The Bucks-Montgomery Veterinary Medical Association met on Feb. 13, 1952, at the Doylestown Moose Hall. **Dr. R. W. Cook**, Philadelphia, showed a motion picture on poultry and swine diseases and their treatments, after which there was a discussion on proposed establishment of regional laboratories by the state.

S/V. **W. RUTH**, Secretary.

Vermont

State Association.—On Jan. 31, 1952, the Vermont Veterinary Medical Association held its annual business meeting at the State House in Montpelier. Officers elected for 1952 are **Drs. J. E. Wheeler**, St. Albans, president; **Norman Cox**, Rutland, president-elect; **Charles Hulst**, West Rutland, vice-president; and **W. D. Bolton**, Burlington, secretary-treasurer.

Mr. Walter Mazan, deputy director of civil defense activities in Vermont, outlined the role veterinarians would be expected to take in an emergency, as well as problems which might be encountered with biological warfare. **Dr. C. A. Jordan**, Newport, read the report of the AVMA delegate to the Milwaukee convention.

After Commissioner of Agriculture **S. G. Judd** presented greetings from his department, **Dr. M. L. Bryant**, inspector-in-charge, BAI, and **Dr. John Canty**, state veterinarian, discussed problems relating to official brucellosis and tuberculosis control programs.

Dr. D. A. Walker, Morrisville, the retiring president, conducted the meeting.

S/W. **D. BOLTON**, Secretary.

West Virginia

State Association.—The winter meeting of the West Virginia Veterinary Medical Association was held Feb. 17-18, 1952, at the Greenbrier Hotel, White Sulphur Springs.

Speakers on the program were **Drs. J. E. Green**, Alabama Polytechnic Institute, Auburn; **L. E. Johnson**, Ohio State University, Columbus; and **Benjamin Schwartz**, chief, Zoological Division, Bureau of Animal Industry, Washington, D. C.

The following films were shown: "Triple Threat of Brucellosis," "Veterinary Economics

and Public Relations," "Meats—U. S. Veterinary Approved," "Bovine Dermatitis," and "Turkey Diseases."

s/ELVIN R. COON, Secretary.

Kyowva Association.—There has been progressively better attendance at each meeting of the newly organized Kyowva Veterinary Medical Association—8 at the first meeting, Nov. 15, 1951; 10 on December 13; and 13 on Jan. 17, 1952, representing Portsmouth, Ohio; Ashland, Ky.; Point Pleasant and Charleston, W. Va.

At the January meeting, the following officers were elected: Drs. George C. Borst, Ashland, Ky., president; Victor H. Miller, Charleston, W. Va., vice-president; and Karl Mayer, Huntington, W. Va., secretary-treasurer.

The president appointed the following committee to work out a constitution and by-laws for the Association: Drs. Harry J. Fallon, Huntington, W. Va., chairman; John G. Martin, Boone, N. Car.; and Karl Mayer.

The remainder of the program consisted of a discussion of relationships between veterinarians and pharmaceutical houses.

s/KARL MAYER, Secretary.

FOREIGN NEWS

Iraq

Dr. Manley Receives Appointment.—Dr. Frank H. Manley (LIV '22), Auburn, Ala., has received an appointment to Baghdad under the expanded technical assistance program of the Food and Agriculture Organization. Dr. Manley, on loan from the Alabama Polytechnic Institute School of Veterinary Medicine, will serve as an advisor in bacteriology. He will be joined by another veterinary specialist, later this year, whose duties will be in the field of biological products.

Dr. Manley previously has served in Cyprus and in Africa.

Israel

National Association.—The thirtieth annual meeting of the Israel Veterinary Medical Association was held in Tel Aviv Dec. 7-8, 1951. This provides an opportune occasion to sketch the development of this organization during the past thirty years.

The Palestine Veterinary Surgeons Association was founded in 1922 by 12 veterinarians, of whom 10 are still active members. When the new state was established in May, 1948, the veterinary organization changed its name to Israel Veterinary Medical Association, which at that time comprised about 85 members. By the end of 1951, the membership had risen to 142.

One of the outstanding characteristics of the

membership is the variety of its background. A survey of 132 members showed that they were natives of 19 countries (Poland 30, Germany 19, Russia 12, Israel 10, Rumania 10, Czechoslovakia 10, Yugoslavia 6, Hungary 5, Iraq 4, United States 4, Baltic States 4; Austria, Turkey, and Syria, 2 each; and England, Holland, Switzerland, Bulgaria, and South Africa, 1 each), and are graduates of 38 universities located in 19 countries.

A breakdown of the membership according to professional activities reveals the following picture:

Government Services (Dept. of Agric. and Army)	52
Hahaklaith (Mutual Livestock Insurance Co., comprising about 80% of this country's cattle population)	42
Municipal Services	22
Private practice (exclusively)	14
University	2
Miscellaneous	10
Total	142

The Israel Veterinary Medical Association publishes a quarterly journal, *Refuah Veterinarith* (Veterinary Medicine), which was started in 1939 as a stencilled veterinary leaflet. The eighth volume (1951) of this quarterly filled 132 pages. It is written in Hebrew and contains shortened English translations of the main articles. It is made up of the following sections: general articles (and research papers), clinical data, current veterinary literature (abstracts and reviews), and association news.

s/SIMON BORNSTEIN, Foreign Corresponding Secretary.

STATE BOARD EXAMINATIONS

Texas.—An examination for license to practice veterinary medicine in Texas will be held June 3 and 4, 1952, at the Veterinary Building, School of Veterinary Medicine, College Station, Texas. The written examination will start promptly at 8:00 a. m. on June 3. Applications must be in the secretary's office by May 10, 1952. Charles W. Koeborg, Box 295, San Angelo, Texas, secretary.

BIRTHS

Dr. (COL '51) and Mrs. Joseph A. Marron, Grants Pass, Ore., announce the birth of a daughter, Jill Louise, on Aug. 20, 1951.

Dr. (OSU '42) and Mrs. W. M. Hildebrand, Piqua, Ohio, announce the birth of a son, Scott Myron, on Dec. 29, 1951.

Dr. (MSC '30), and Mrs. George E. Bowler, Ann Arbor, Mich., announce the birth of their fourth daughter, Edith Anne, on Jan. 19, 1952.

Captain (UP '46) and Mrs. Erich C. Nehmert, Philadelphia, Pa., announce the birth of a daughter, Cheryl Jeanne, on Feb. 11, 1952.

DEATHS

Mansel O. Barnes (WSC '27), 48, Olympia, Wash., died of a heart attack on Dec. 28, 1952, at Kennewick, Wash., where he was spending the holidays with relatives. Dr. Barnes was employed by the U. S. BAI, and at the time of his death was setting up county disease control committees in an attempt to eradicate brucellosis in Washington. He is survived by his widow, two children, and his parents. He had been a member of the AVMA.

Henry L. Bissonnette (ONT '08), 64, St. Paul, Alta., died Nov. 6, 1951, from injuries received in an automobile accident. Dr. Bissonnette had practiced at Gravelbourg, Sask., and Fernie, Alta., before coming to St. Paul. He is survived by his widow, two sons, and a daughter.

James R. Brown (COL '42), 37, Sparks, Nev., died Jan. 21, 1952, of a heart attack. Dr. Brown was conducting a small animal practice at Sparks and serving as part-time instructor in the College of Agriculture at the University of Nevada, at the time of his death. He was admitted to the AVMA in 1942.

Robert M. Burleigh (UP '51), 24, East Lansing, Mich., was killed in a head-on collision on Feb. 8, 1952. Dr. Burleigh was an AVMA research fellow at Michigan State College. He was a member of the AVMA.

John Ceva (CVC '18), 65, Oostburg, Wis., died in 1951, after a lengthy illness. Dr. Ceva was a general practitioner. He was a member of the Wisconsin Veterinary Medical Association and of the AVMA.

Edward J. Cole (CVC '09), 69, Pawtucket, R. I., died Jan. 22, 1952. A past-president of the Rhode Island Veterinary Medical Association, Dr. Cole was official veterinarian of the Narragansett race track and had been a practitioner in the Blackstone Valley since 1908. He is survived by his widow and a son, Dr. Edward L. Cole (UP '33), Pawtucket, with whom he conducted an animal hospital. Dr. Cole was a member of the AVMA.

Harry F. Failor (ONT '11), 67, Springdale, Ark., died Dec. 25, 1951, of a heart attack. Dr. Failor had practiced in Lima, Ohio, until his retirement in 1946. He was a member of the Ohio Veterinary Medical Association and of the AVMA.

Roy Grimsley (WES '07), 71, Allen, Kan., died Dec. 19, 1951, of a heart attack. Dr. Grimsley had practiced in Allen for nearly fifty years. He was a member of the Kansas State Veterinary Medical Association and of the AVMA.

Chas. F. Haynes (WSC '34), 47, Salem, Ore., died in November, 1951. After receiving his D.V.M. degree, Dr. Haynes served the Montana Livestock Sanitary Board as district deputy, in which capacity he had charge of the

Helena and Missoula districts. In 1947, he was appointed state veterinarian for Oregon, in which capacity he served until ill health forced his retirement. He was admitted to the AVMA in 1938.

Reuben Hilty (OSU '07), Toledo, Ohio, died March 4, 1952. Dr. Hilty joined the AVMA in 1908 and was president in 1927-1928. A complete obituary will be published in the May JOURNAL.

Vernon S. Larson (CVC '10), 68, Madison, Wis., died Nov. 23, 1951, after a brief illness. Dr. Larson was state veterinarian of Wisconsin, but had retired some time ago. He was a member of the Wisconsin Veterinary Medical Association and of the AVMA.

Andrew L. MacNabb (ONT '23), 54, Guelph, Ont., died Feb. 16, 1952. Dr. MacNabb was a member of the AVMA. An obituary appears on page 217 of this JOURNAL.

John R. Mohler (UP '96), 76, Washington, D. C., died Feb. 28, 1952. Dr. Mohler was a member of the AVMA. An obituary will appear in the Editorial Section of the May JOURNAL.

Ellsworth N. Pearson (MSC '39), 39, Los Angeles, Calif., died Feb. 5, 1952. Dr. Pearson was associated with the North Shore Animal Hospital in Chicago, Ill., until 1947, when he established his own practice in California. He was a member of the California and Southern California Veterinary Medical Associations and of the AVMA.

Thomas J. Quinn (UP '10), 60, Lansdowne, Pa., died Jan. 27, 1952. Dr. Quinn attained the rank of captain in the Army in World War I. He was a member of the Pennsylvania and Keystone Veterinary Medical Associations and of the AVMA. He is survived by his widow and three daughters.

Carl J. Schubert (ISC '37), 38, Slinger, Wis., died from injuries received in an automobile accident Nov. 29, 1951. Dr. Schubert was employed by the Wisconsin State Department of Agriculture and Markets. He was a member of the Wisconsin Veterinary Medical Association and of the AVMA.

James M. Shellenberger (UP '43), 32, Mishawaka, Ind., died Nov. 14, 1951, of injuries received while on a hunting trip in Michigan. Dr. Shellenberger was a member of the Indiana Veterinary Medical Association and of the AVMA.

Abraham M. Stark (COR '10), 62, New York, N. Y., died Oct. 5, 1951. Dr. Stark served with the American Expeditionary Forces from 1917 to 1919. He was a member of the New York State Veterinary Medical Society, the Veterinary Medical Association of New York City, and of the AVMA.

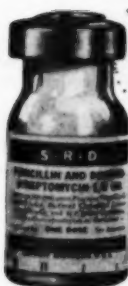
Arthur M. Wilson (OVC '91), 81, Wheatley, Ont., died Nov. 27, 1951, as the result of an automobile accident. Dr. Wilson was admitted to the AVMA in 1916.

*Indicates members of the AVMA.

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COMING MEETINGS

Notices of Coming Meetings must be received by 4th of month preceding date of issue

State College of Washington. Annual short course for veterinarians. Pullman, Wash., April 10-11, 1952. Richard L. Ott, College of Veterinary Medicine, State College of Washington, Pullman, Wash., chairman.

Northern Illinois Veterinary Medical Association. Annual spring meeting. Faust Hotel, Rockford, Ill., April 16, 1952. L. W. Derrer, Mount Carroll, Ill., secretary.

North Central Iowa Veterinary Medical Association. Annual meeting. Warden Hotel, Fort Dodge, Iowa, April 17, 1952, 10:00 a.m. to 5:00 p.m. B. J. Gray, Box 797, Fort Dodge, Iowa, secretary.

Southeast Missouri Veterinary Medical Association. Spring meeting. Kennett, Mo., April 18, 1952. F. A. Stepp, Sikeston, Mo., secretary.

American Animal Hospital Association. Annual meeting. Hotel Huntington, Pasadena, Calif., April 30-May 3, 1952. Wayne H. Riser, 5335 Touhy Ave., Skokie, Ill., secretary.

Oklahoma Conference for Veterinarians. School of Veterinary Medicine, Oklahoma A. & M. College, Stillwater, Okla., May 5-6, 1952. D. R. Peterson, professor and head, Department of Veterinary Anatomy.

Ohio State University, College of Veterinary Medicine. Annual conference for veterinarians. Columbus, Ohio, May 7-8, 1952. J. H. Helwig, Ohio State University, College of Veterinary Medicine, Columbus, Ohio, chairman.

Alabama Polytechnic Institute. Annual conference for veterinarians. Alabama Polytechnic Institute, Auburn, Ala., June 5-7, 1952. R. S. Sugg, dean.

Kansas State College. Annual Conference for veterinarians. Kansas State College, Manhattan, Kan., June 6-7, 1952. E. E. Leasure, dean, School of Veterinary Medicine.

Georgia Veterinary Medical Association. Annual meeting. Hotel Oglethorpe, Savannah, Ga., June 15-17, 1952. Chas. C. Rife, 420 Edgewood Ave., N.E., Atlanta, Ga., secretary.

North Carolina State Veterinary Medical Association. Annual meeting. Ocean King Hotel, Atlantic Beach, Morehead City, N. Car., June 16-17, 1952. Clyde W. Young, Mocksville, N. Car., secretary.

American Veterinary Medical Association. Annual meeting. Ambassador Hotel, Atlantic City, N. J., June 23-26, 1952. J. G. Hardenbergh, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Kentucky Veterinary Medical Association. Annual meeting. Seelbach Hotel, Louisville, Ky., July 23-24, 1952. T. J. Stearns, Room 216, Livestock Exchange Bldg., Bourbon Stockyards, Louisville, Ky., secretary.

New York State Veterinary Medical Society. Annual meeting. Sagamore Hotel, Bolton Landing, Lake George, N. Y., Sept. 9-12, 1952. J. S. Halat, 804 Varick St., Utica, N.Y., executive secretary.

Canadian Veterinary Medical Association. Fourth annual convention. The Algonquin, St. Andrews by-the-sea, New Brunswick, Canada, Sept. 15-17, 1952. A. B. Wickware, 1031 Carling Ave., Ottawa, Canada, executive secretary.

Pennsylvania State Veterinary Medical Association. Annual meeting. Pocono Manor Inn, Pocono Manor, Pa., Oct. 7-10, 1952. Dr. R. C. Snyder, Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Eastern Iowa Veterinary Medical Association. Annual meeting. Cedar Rapids, Iowa, Oct. 9-10, 1952. N. R. Waggoner, Olin, Iowa, secretary.

United States Livestock Sanitary Association. Annual meeting. Hotel Seelbach, Louisville, Ky., Oct. 29-31, 1952. R. A. Hendershott, 1 West State St., Trenton 8, N. J., secretary. Copies of the Annual Proceedings of the U. S. L.S.A. are available at \$5 per copy.

Southern Veterinary Medical Association. Annual meeting. Hotel Heidelberg, Jackson, Miss., Nov. 17-19, 1952. A. A. Husman, Raleigh, N. Car., secretary.

Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Richard L. Stowe, 149 Otsego Ave., San Francisco, Calif., secretary.

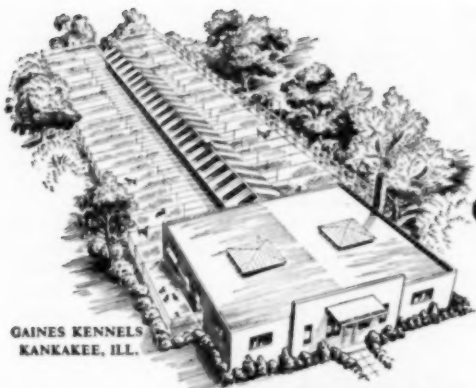
Cedar Valley Veterinary Association, the second Monday of each month (except July and August) at Black's Tea Room, Waterloo. F. E. Brutsman, Traer, Iowa, secretary.

(Continued on p. 30)



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(COMING MEETINGS — continued from p. 28)

Central California Veterinary Medical Association, the fourth Tuesday of each month. W. E. Smith, 516 Oatman, Sanger, Calif., secretary.

Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel in Greensboro. Mr. Earl D. Adams, Greensboro, N. C., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

Coon Valley Veterinary Association, the second Wednesday of each month, September through May, at the Bradford Hotel, Storm Lake, Iowa. V. D. Ladwig, Sac City, Iowa, secretary.

Cuyahoga County (Cleveland, Ohio) Veterinary Medical Association, the first Wednesday of each month—September through May (except January)—at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. Roger W. Grundish, 4217 Mayfield Road, South Euclid 21, Ohio, secretary.

East Bay Veterinary Medical Association, bi-monthly, the fourth Wednesday. Robert Clemens, 23352 Orchard, Hayward, Calif., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Florida, North-East Florida Veterinary Medical Association, the second Thursday of each month, time and place specified monthly. J. O. Whiddon, 829 San Marco Blvd., Jacksonville, Fla.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis, Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lapon, Houston, Texas, secretary-treasurer.

Illinois Valley Veterinary Medical Association, the second Sunday evening of even-numbered months at the Jefferson Hotel, Peoria, Ill. S. M. McCully, Lacon, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month, in Louisville or within a radius of 50 miles. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Small Animal Hospital Association,

(Continued on p. 34)



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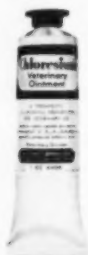
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VETERINARY DIVISION

1. Smith, L. W., and Livingston, A.E.: *Am. J. Surg.* 62:358, 1943.

2. Schaffer, J. D.: *North Am. Vet. J.* 817, 1950.

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(COMING MEETINGS — continued from p. 30)

the first Monday of each month, at the Hotel Continental. T. M. Eagle, Parkville, Route 2, Mo., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curtis, 70 Central Ave., Kansas City 18, Kan., secretary.

Kern County Veterinary Medical Association, the first Thursday of each month. Richard A. Stiern, 17 Niles St., Bakersfield, Calif., secretary.

Keystone Veterinary Medical Association, the Philadelphia County Medical Society Building, 301 S. 21st Street, Philadelphia, Pa., on the fourth Wednesday of each month. Raymond C. Snyder, 39th and Woodland Ave., Philadelphia 4, Pa., secretary.

Kyowva Veterinary Medical Association, the second Thursday of each month in the Hotel Prichard, Huntington, W. Va., at 8:30 p.m. Karl Mayer, 1531 Fourth Ave., Huntington, W. Va., secretary.

Maricopa County Veterinary Association, the second Tuesday of each month. Charles J. Prchal, 1722 East Almeria Road, Phoenix, Ariz., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday night of each month from October through June, at the Hotel Essex House, Newark, N. J. Myron S. Arlein, 2172 Millburn Ave., Maplewood, N. J., secretary.

Michiana Veterinary Medical Association, the second Thursday of each month. Write R. W. Worley, secretary, 3224 L.W.W., South Bend, Ind., for location.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. C. Edward Taylor, 2146 S. Broad St., San Luis Obispo, Calif., secretary.

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New Castle County Veterinary Society, the second Wednesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. Harold Roberts, Paper Mill Road, Newark R3, Del., secretary.

New York City, Veterinary Medical Association of, the first Wednesday of each month

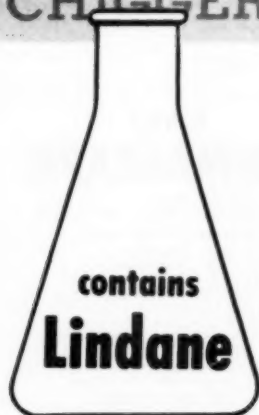
(Continued on p. 36)

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at the New York Academy of Sciences, 2 East 63 St., New York City. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Northern New Jersey Veterinary Association, the fourth Tuesday evening from September through June, at the Casa Mana Restaurant, Cedar Lane, Teaneck, N. J. Robert R. Shomer, 1680 Teaneck Road, N. J., secretary.

Northern San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. Tom Hagan, Gen. Del., Escalon, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. Clark Stillinger, 1742 E. Holt Ave., Pomona, Calif., secretary.

Orange County Veterinary Medical Association, bi-monthly. Donald E. Lind, 2643 N. Main, Santa Ana, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. P. H. Hand, Box 1035, Millbrae, Calif., secretary.

Piedmont Veterinary Medical Association, the last Friday of each month at 7:00 p.m. in Mull's Motel in Hickory, N. Car. C. N. Copeland, Hickory, N. Car., secretary.

Pima County (Arizona) Veterinary Medical As-

sociation, the third Wednesday of each month, in Tucson. R. W. Adams, 2103 S. 6th Ave., Tucson, Ariz., resident secretary.

Portland (Oregon) Veterinary Medical Association, the second Tuesday of each month, in the Auditorium of the Upjohn Company. Robert L. Hawley, 1001 N. W. Fourteenth Ave., Portland, Ore., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. John McChesney, 40 6th St., Petaluma, Calif., secretary.

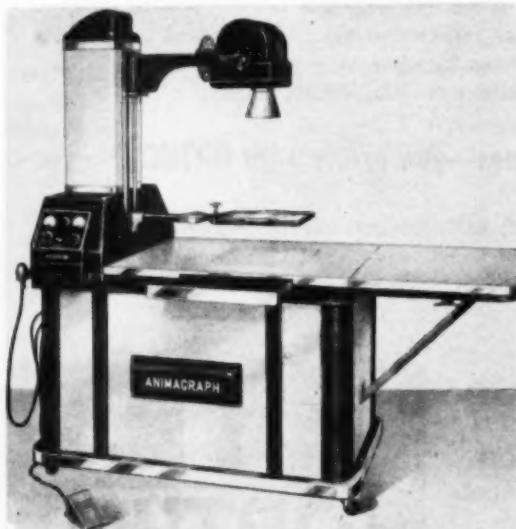
Roanoke-Tar (N. Car.) Veterinary Medical Association, the first Friday of each month, time and place specified monthly. B. H. Brown, Weldon, N. Car., secretary.

Sacramento Valley Veterinary Medical Association, the second Wednesday of each month. S. M. Foster, 430 College, Woodland, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. Warren J. Dedrick, 904 S. Lemon, El Cajon, Calif., secretary.

Santa Barbara-Ventura Counties Veterinary Medical Association, the second Friday of

(Continued on p. 40)



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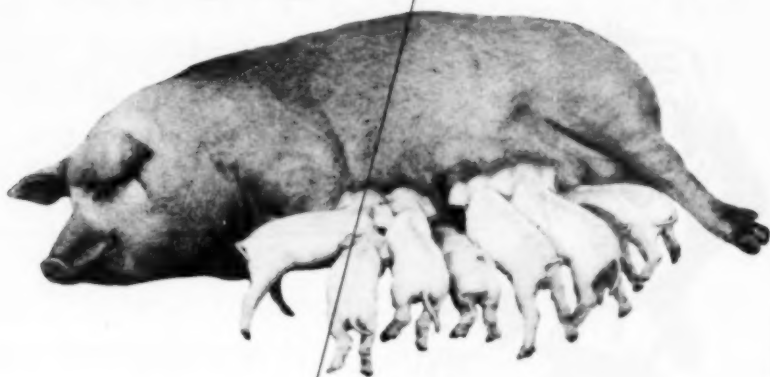
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- To treat "false pregnancy" in bitches.

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Department of Veterinary Medicine

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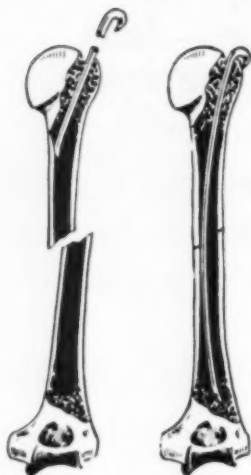
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WRITE FOR INFORMATION

(COMING MEETINGS — continued from p. 36)

even months. Joe Ridgway, 1784 Thompson Blvd., Ventura, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. R. W. Sprowl, 11756 San Vicente Blvd., Los Angeles 49, Calif., secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club, Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, in Director's Parlor of the Brookside State Bank, Tulsa, Okla. John Carnes, Muskogee, Okla., secretary.

Foreign Meetings

Second International Congress of Physiology and Pathology of Animal Reproduction and of Artificial Insemination. The Royal Veterinary and Agricultural College, Copenhagen, Denmark, July 7-11, 1952. Ed. Sorensen, the Royal Veterinary and Agricultural College, Bulowsvej 13, Copenhagen V, Denmark, secretary general.

Fifteenth International Veterinary Congress. Stockholm, Sweden, Aug. 9-15, 1953. Dr. L. de Blicke, Soestdijkseweg 113N., Bilthoven, Netherlands, secretary, Permanent Committee.

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Correspondence

EDITOR,

JOURNAL OF THE AVMA:

What prompts one veterinarian to hit another one "below the belt"?

Instances of this type are happily the exception rather than the rule, but an especially ugly example was recently brought to our attention.

A veterinarian vaccinated a large adult Great Dane dog, giving a 15-cc. dose of single injection rabies vaccine. Later, the dog developed a progressive paralysis with probable fatal prognosis.

The owner consulted two other veterinarians. Both of them told him that either the vaccine or the way it was given were to blame and that different brands of canine rabies vaccine varied a great deal in ability to cause trouble.

Armed with this highly valued piece of misinformation, the dog owner threatened litigation against the veterinarian and producer of the vaccine.

How much better if the two veterinarians, when consulted, had truthfully told the owner: "It is unfortunate that one out of several thousand people or animals vaccinated against rabies may develop paralysis. The blame can not be placed on the product used or the technique of injection. It might happen to me or to any physician in town."

No complicated code of ethics is needed to avoid creation of enmity and trouble as we have outlined here. The only guide lines needed are the laws of fair play, common decency, and application of the Golden Rule.

Sincerely yours,

A. H. QUIN, D.V.M.

February 13, 1952.

Dr. J. G. Hardenbergh, Executive Secretary,
American Veterinary Medical Association,
600 South Michigan Ave.,
Chicago, Illinois

Dear Dr. Hardenbergh:

Reference is made to the conference held with the Executive Committee of the Ohio State Veterinary Medical Association on Thursday, Jan. 3, 1952. The purpose of this conference was to discuss, in an open and friendly manner with you, excerpts of a letter contained in the December, 1951, issue of the JOURNAL of the American Veterinary Medical Association, included on pages 34 and 36 which had in part, reference to utilization of laymen (so-called technicians) in the brucellosis program in Ohio.

Please be assured that the intent and purpose of this conference was to clarify with you, the utilization of lay-technicians in this State and to forestall the potential possibility of editorial friction between professional journals and publications submitted to the livestock industry. Your presence and participation in the evolving discussion

(Continued on p. 44)



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the owner by creating the proper setting—an air of medical efficiency that builds confidence. You'll want a Professional uniform, naturally, designed with the assistance of a well-known D.V.M. to offer the last word in appearance, utility and comfort.



482E—REVERSIBLE GOWN

Here's a brand-new version of a popular gown. Note three roomy pockets plus side vents for access to inner pockets! You'll find Professional workmanship too: double-needle seams, extra wide belt ties in back, (no buttons—nothing else to fasten!) trim tailoring. Average length—39"; sizes 34 to 46.

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White Sanforized Linene . . .	5.00 ea.	4.75 ea.	4.50 ea.
Tan or Gray Sanf. Linene . . .	5.50 ea.	5.25 ea.	5.00 ea.

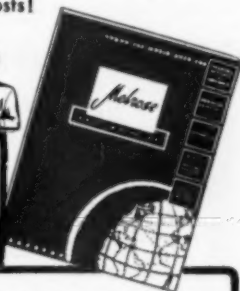
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ZINC... promotes longer life, better growth.

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was most sincerely appreciated and known to be of benefit to all concerned.

As a prelude and for informative purposes in the action taken by the Ohio State Veterinary Medical Association, the question of utilizing the services of technicians as a supplement to the veterinary practitioner participation in the brucellosis control program, was inaugurated in combination with the Practitioner Advisory Committee (appointed by the President of the State Association) and the State and Bureau regulatory offices, to secure the needed clarification of the situation presented and for the more definite reason of preventing any misunderstanding. Frank and sincere discussion developed with full approval being reached. Following this, the matter was presented to the local veterinary organizations in Ohio for the reasons as previously indicated. A meeting of the Executive Committee and Practitioner Advisory Committee in combination with both regulatory offices was held a short time prior to the annual meeting, for the purpose of presenting the reactions and decisions obtained in discussing the utilization of lay-technicians with members of the profession in the field.

The report of the Practitioner Advisory Committee, copy of which is attached, was presented at the business session of the meeting for discussion purposes and was voted approval. After due consideration of this report, the Executive Committee submitted a recommendation, copy of which is attached, for the members' consideration, which was voted approval by the membership. In further detail, there is also furnished a copy of a letter which was submitted to each individual member of the Practitioner Advisory Committee.

As indicated at the time of the annual convention, after a year's evaluation of the use of lay-technicians in the brucellosis control program, it is definitely believed to have been of proven value. In its mechanical aspect of supplementing practitioner's service to the livestock industry, it enabled expansion of the brucellosis program thus furthering the need for professional advice and service relative to the disease itself. In addition, it is believed that this action has definitely furthered the goodwill and cooperative attitude between the veterinary profession and animal industry in this State.

Definite assurance can be given that, aside from the mechanical assistance rendered by lay-technicians, the main objective was to further increase the service and value of our professional responsibilities to the livestock industry and in so doing, increase in an ethical way, the stature of our profession.

Very truly yours,
**THE OHIO STATE VETERINARY
MEDICAL ASSOCIATION**
J. T. Burriss, *President*
F. J. Kingma, *Secretary*
H. G. Geyer, *Committee Member*
R. L. Knudson, *Committee Member*

(Continued on p. 46)

FASTER-GROWING PIGS with the help of his Veterinarian and his PURINA DEALER...

You might think Milton McGill

of Iowa Falls, Iowa, was pulling down on this pig, but he is not. This 7-week-old fellow is a husky rascal—and heavy. McGill is holding him steady so you can see the scale hand, which has already gone around once—weight is $45\frac{1}{2}$ lbs.

This pig is typical of the 74 pigs that 7 sows had raised to 7 weeks.

Mr. McGill has success with hog raising because of his own ability and the good breeding of his stock.

But, like thousands of hogmen, he uses the services of his Veterinarian to keep his hogs healthy and depends on his Purina Dealer to keep his hogs properly fed.



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REPORT OF PRACTITIONER ADVISORY COMMITTEE SUBMITTED TO THE OHIO STATE VETERINARY MEDICAL ASSOCIATION FOR CONSIDERATION

The members of this association are familiar with the brucellosis control program and its method of operation in this state, also the degree of obligation that is expected of the Ohio-Federal regulatory offices in pursuing this program to the fullest for the benefit of the livestock industry. At the present time, there is definite indication that several milk plants have already inaugurated a policy of demanding negative brucellosis herds to qualify for shipment of milk to their plants. It is believed it can be logically assumed that this procedure will increase.

The participation in disease control programs is a definite part of a veterinarian's responsibility, but in like connection, the practitioner must retain his practice obligations and as such, cannot be expected to completely neglect these obligations for full-time participation in the bleeding phase of the brucellosis control program.

Statistics indicate that there is approximately a two and one-half million cattle population in this State as compared to approximately four hundred twenty-nine large animal, ninety-two small animal practitioners; of this group only some are in a position to participate in the brucellosis program — at least part time. Moreover, there are counties where veterinary service is limited or non-existent. With this in mind, it is felt advisable and necessary that practitioner participation be supplemented by the employment of properly trained and supervised lay personnel, such employees to be under the direct supervision of either the Ohio Division of Animal Industry or the Federal Bureau of Animal Industry, and more specifically, under the immediate supervision of a veterinarian from either of the previously indicated offices.

The utilization of such lay personnel to augment the services of the veterinary practitioners would, in a measure, answer the already existing demands of the industry. The accelerated service through designation of a greater

number of infected herds will likewise increase the demands from the industry for professional veterinary service. However the use of lay personnel is to be utilized only in those counties where area brucellosis programs are in progress and only then when practicing veterinarians are unable to do the work in said counties in a specified period of time.

REPORT OF EXECUTIVE COMMITTEE

Since it has been found to be physically impossible for the practicing veterinarians of Ohio to carry out the collecting of blood samples in the brucellosis program in various areas within the period commensurate with efficient disease control measures, the Executive Committee, meeting jointly with the Practitioners Advisory Committee, together with federal and state veterinary personnel, recommends to the Association that lay personnel (trained by, and under the supervision of the Ohio Division of Animal Industry in cooperation with the United States Bureau of Animal Industry) be used in Ohio for the purpose of bleeding cattle in those areas where veterinarians have not been able to carry on the program.

NOTE: Official action of the Ohio State Veterinary Medical Association, on this issue, is reported in the 1951 annual Year Book of the Association on page 53 (items 1 and 2 at the bottom of the page), page 54 (item 3 at the bottom of the page) and pages 68, 69 and 70.

**OHIO DEPARTMENT OF AGRICULTURE AND
UNITED STATES BUREAU OF ANIMAL INDUSTRY
COOPERATING**

38 Old Postoffice Building
Columbus 15, Ohio
January 12, 1951

Dear Dr.:

This will serve to convey to you our appreciation for the advice and consideration of regulatory problems, in

(Continued on p. 48)

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(CORRESPONDENCE -- continued from p. 46)

your connection as a member of the Practitioner Advisory Committee.

It is sincerely believed that only through such a relationship and a mutual understanding that organized progress can be made. The comprehensive responsibilities of veterinary medicine today are becoming so broadened that it is practically impossible for any one individual or the various phases of veterinary medicine, such as practice, research, education, or regulatory groups, to be fully cognizant of all the problems involved.

The utilization of brucellosis technicians, it is believed, will be of mutual benefit to the veterinary profession and the livestock industry, and this standard should always be the guiding one in arriving at any contemplated changes. It is hoped that this method of factual exchange of the responsibilities of our profession will always continue.

Very truly yours,

R. L. Knudson, Veterinarian in Charge
U. S. Bureau of Animal Industry

H. G. Geyer, Chief
Division of Animal Industry

(An individual original of this letter was sent to all members of the Practitioner Advisory Committee)

[In the letter to Mr. Gifford, excerpts from which were published in the December JOURNAL (adv. pp. 34, 35), no reflection on the Ohio arrangement for the use of lay technicians in collecting blood samples for brucellosis testing was implied. On the contrary, the Ohio V.M.A. and its members are to be commended for the thoughtful analysis of the control program in that state prior to formulating and approving the lay technician arrangement. Comparison of the numbers of veterinarians in relation to cattle populations in Ohio and Wisconsin was intended to show that some states have apparently been able to carry on their brucellosis control programs without resorting to use of lay technicians by adopting programs designed to obtain the greatest possible degree of practitioner interest and cooperation. This is desirable regardless of other circumstances and arrangements. If it is believed that the expeditious prosecution of these programs requires lay technicians, the methods used in Ohio to ensure understanding and approval of such arrangements is to be recommended.]—Ed.

Dr. Bunn Joins Staff of Sharp and Dohme, Inc.

Dr. Carl E. E. Bunn's (COLO '51) appointment as staff veterinarian at Sharp and Dohme, Inc., Philadelphia, is announced by Dr. S. F. Scheidy, veterinary medical director.

While completing his studies, Dr. Bunn was histology and pathology technician in the Division of Veterinary Medicine, Colorado A. & M. College, and from 1948-1951 was pathology technician engaged in organizing a pathology department at Larimer County Hospital, Fort Collins, Colo.

During World War II, Dr. Bunn served overseas in the Palu Islands and the Philippines, and holds the commissioned rank of captain, U.S.M.C.R. (inactive). He is a member of the AVMA and the Pennsylvania State Veterinary Medical Association.

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(Continued on p. 52)

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¹ Flinipubli, S. A. and DeCamp, D., Vet. Med., November 1950. ² Ibid.

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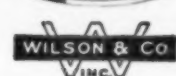
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POSITION WANTED—veterinary student, 25 years old, wants summer employment between junior and senior years, has good veterinary background. Interested in professional experience. Address "Box S 9," c/o JOURNAL of the AVMA.

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(Continued on p. 54)

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(CLASSIFIED ADS — continued from p. 52)

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(Continued on p. 56)

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(Continued on p. 58)

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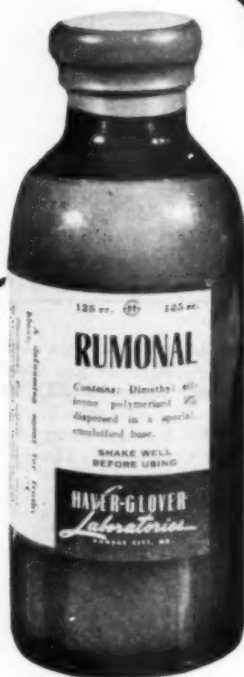


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